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Notes on Some Species of the Nematode Genus *Cooperia* from Cattle and Sheep

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(1) THE SPECIFIC CHARACTERS OF COOPERIA MCMASTERI GORDON, 1932

Through the kindness of Dr. F. H. S. Roberts and Mr. H. McL. Gordon, the writer has received specimens of the worm described by Mr. Gordon (1932) under the name of *Cooperia mcmasteri*, and has been asked to express an opinion as to the validity of the species. Some doubt was at first felt as to its distinctness from *C. oncophora* (Railliet, 1898), and in fact the writer has been able to find no visible difference between the females of the two species. The males, however, prove to possess characters by which, when once these have been appreciated, they can be picked out even under a low power of the microscope. The most obvious criterion is the shape of the spicules in lateral view (Fig. 1). [Figs. overleaf.] In *C. oncophora* the spicules, in such a view, have a characteristic double curvature, with a prominent flange or thickening ventrally, and a concavity dorsally, at about the middle of their length. The spicules of *C. mcmasteri* are almost straight, their dorsal outline being very slightly convex. They are also more slender and delicate in appearance than those of *C. oncophora*.

In the original description of *C. mcmasteri* the spicules are described as slender, with bifid posterior extremities. In dorsal or ventral view, particularly the former (Fig. 2 A), each spicule appears to have a spine-like process, ending in a point some distance before the tip, on its inner aspect. But a similar structure can frequently be seen in *C. oncophora* (Fig. 2, B), and in both species it seems probable that it is not a separate process, but rather a thickened fold or ridge in the delicate membrane which borders the inner side of the spicule. In any case, this structure is not a reliable specific character.

The form of the tips of the spicules does, however, afford a satisfactory criterion. In *C. oncophora* (Figs. 2 and 3, B), the shaft of each spicule ends in a slight expansion the outline of which has a vague resemblance to a human foot, the heel being at the extremity and the toe forming a small recurved barb. The hyaline cap surrounding this structure is rounded and knob-like. In *C. mcmasteri* (Figs. 2 and 3, A) both the tip of the shaft and the hyaline cap are somewhat spatulate, though in some views they may assume the appearance shown in Figs. 1, A and 3, C. The extreme end of the spicule forms a blunt point.

The genital cone, the complex structure of which can only be made out under high magnifications, also shows constant specific differences. These are not easy to define, and will be best appreciated by reference to Fig. 3, A and B.

Gordon states that the average length of the spicules in *C. mcmasteri* is 0·27 mm. With this the writer's own measurements agree, the range of variation observed being 0·25 to 0·29 mm. There is, in this respect, no appreciable difference between *C. mcmasteri* and *C. oncophora*. Ransom (1911) gives 0·24 to 0·3 mm. as the length of the spicules in the latter species, and the writer's measurements are almost exactly the same (0·23 to 0·3 mm.).

Leroux (1936) apparently regards *Cooperia mcmasteri* as a synonym of *C. surnabada* Antipin (1931), a form recorded from cattle in Azerbaijan (Transcaucasia). From Antipin's description and figures it is not, in the writer's opinion, possible to determine whether or not this view is correct, and the question could only be settled by a re-examination of the type-specimens of *C. surnabada*. The form of the genital cone, as figured by Antipin, suggests that the species may be distinct, while the length of the spicules is stated to be only 0·228 to 0·235 mm. In shape the spicules appear to be somewhat intermediate between those of *C. mcmasteri* and *C. oncophora*. For the present, therefore, *C. mcmasteri* must be regarded as a distinct species.

C. mcmasteri was originally recorded from a calf in New South Wales, where Mr. Gordon has more recently found it also in sheep. Dr. Roberts has obtained it from cattle at several localities in Queensland, and it appears to occur also in New Zealand, Mr. Gordon having kindly forwarded to the writer some specimens sent to him by Mr. Tetley from that country, presumably from sheep. It is interesting to be

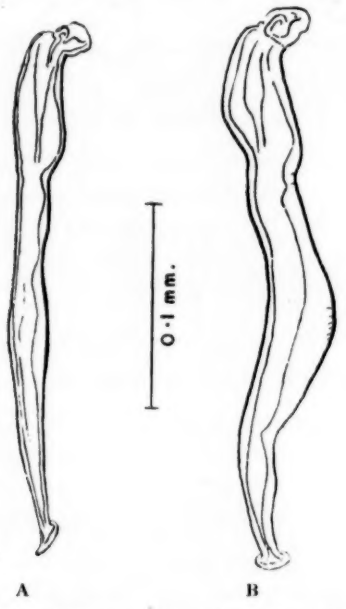

Fig. 1.—Right spicule, seen from the right side: (A) *Cooperia mcmasteri*; (B) *C. oncophora.*

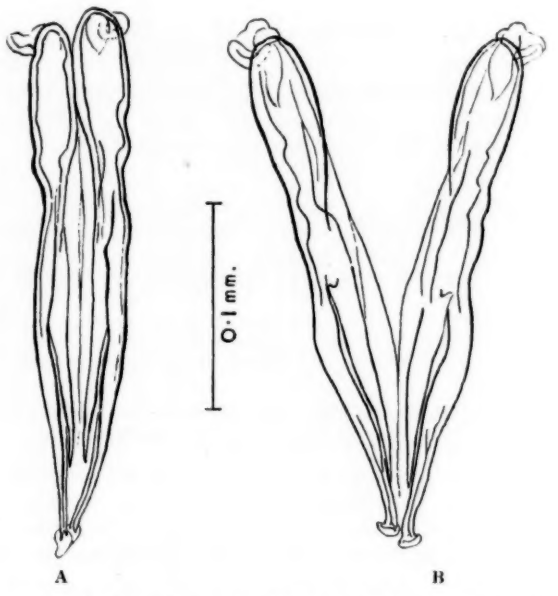

Fig. 2.—Spicules, dorsal view: (A) *C. mcmasteri*; (B) *C. oncophora.*

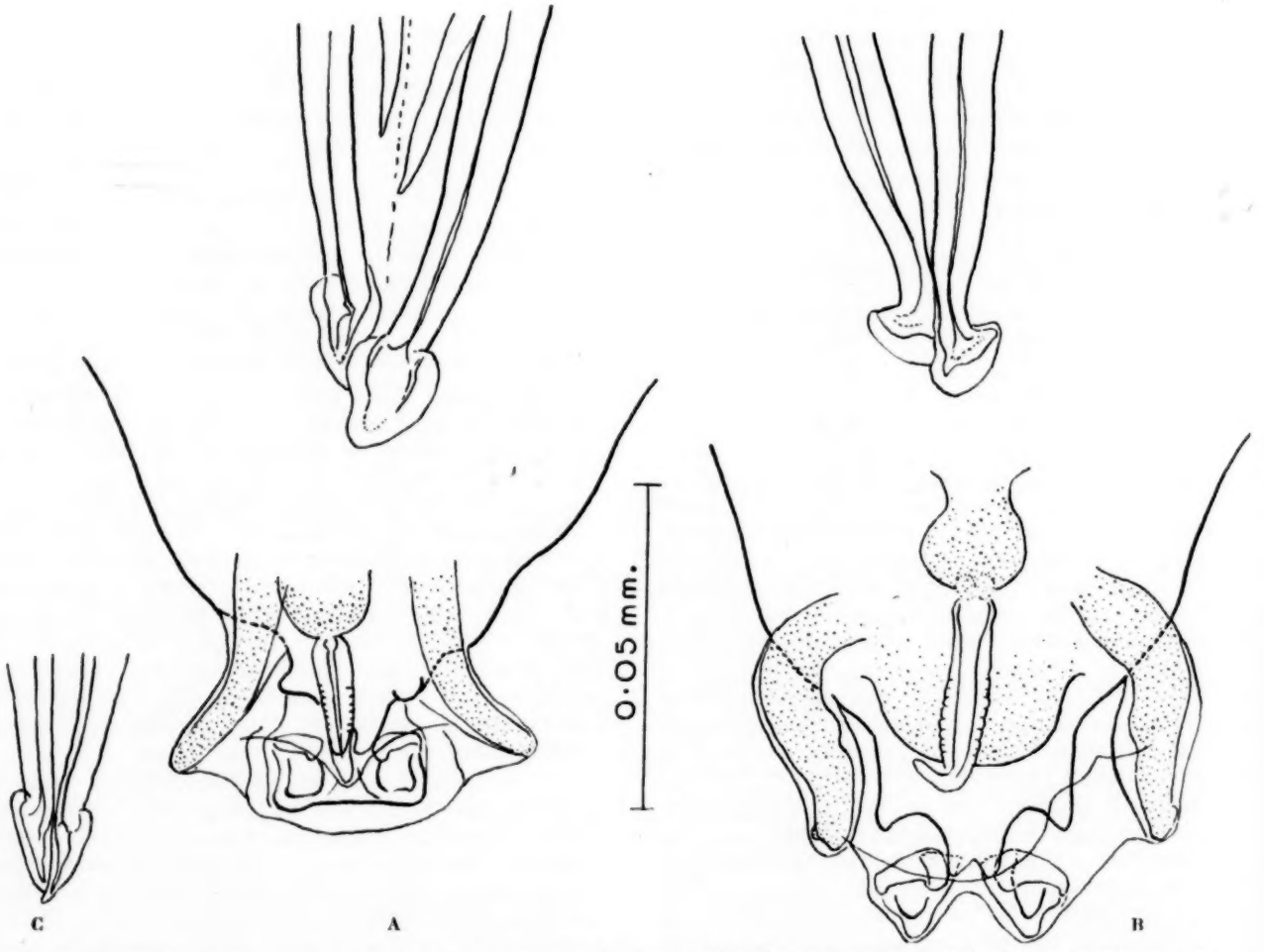

Fig. 3.—Genital cone and tips of spicules, ventral view: (A) *C. mcmasteri*; (B) *C. oncophora*; (C) *C. mcmasteri*; ventral view of the tips of the spicules in another specimen.

able to record the occurrence of this species in Great Britain. A collection consisting mainly of *C. oncophora*, from a lamb in North Wales, for which the writer is indebted to Mr. E. L. Taylor, proved to include a small admixture of *C. mcmasteri*, which does not appear to have been recognised previously in this country.

(2) The Status of Cooperia nicolli and C. fieldingi Baylis, 1929

These two species were described as new by the writer (1929) from cattle in Queensland. They appeared to differ from *C. pectinata* Ransom, 1907, and *C. punctata* (v. Linstow, 1907) respectively, as described by Ransom (1911), chiefly in the greater length of the spicules. Dikmans (1932, 1935), who has examined some of the writer's material, has shown that the range of variation in the length of the spicules of American specimens of both *C. pectinata* and *C. punctata* is much greater than was indicated by Ransom, and that it is impossible to draw a clear distinction between *pectinata* and *nicolli*, or between *punctata* and *fieldingi*. With this conclusion the writer agrees, having since examined numerous specimens in which the lengths of the spicules were intermediate. Accordingly *C. nicolli* must be regarded as a synonym of *C. pectinata*, and *C. fieldingi* as a synonym of *C. punctata*.* The full range of variation observed by Dikmans and by the writer in the length of the spicules is, for *C. pectinata*, 0·22 to 0·39 mm., and for *C. punctata* 0·112 to 0·235 mm.

Travassos (1937) reduces the number of known species of *Cooperia* (*sensu stricto*) to eleven, eight of which have been recorded from domestic ruminants. To these must be added *C. spatulata*, recently described by the writer (1938) from cattle and sheep in Malaya and Australia.

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*Travassos (1937), in his recent monograph of the family Trichostrongylidae, treats *C. fieldingi* as a synonym of *C. curticei*, but this view appears to be without justification.

CLINICAL COMMUNICATIONS

A Whelping Case Record and Sequelæ

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Patient.—Scottish terrior bitch, aged three-and-a-half years, abnormally heavy in whelp.

History and Examination.—Mated April 26th, commenced whelping June 23rd, five days premature.

At the end of the fourth week after mating, the bitch showed signs of an abnormally large litter. At the end of the fifth week she could only take 15 to 20 minutes exercise, while at the end of the sixth she was unable to take any, and looked like a bitch at full-time. Her general health was, however, excellent, her appetite was good, and she rested well.

According to orders, she was strictly dieted from the time of mating, as from previous experience I was aware that she had a tendency towards large litters. For the first four weeks she had four ounces of raw, lean steak, minced with one-and-a-half slices of brown bread—after the fourth week she had eight ounces of raw meat, with the same quantity of bread, in two meals, half of the meat being occasionally varied with an equal amount of cooked fish.

On the 57th day, I was called in, as the bitch appeared very uncomfortable. She was examined, *per vaginam*, and was found to be ready to whelp at any time. Two hours later, at 5.30 p.m., the first puppy was born, spontaneously—three hours later, she started to have good pains, which lasted over an hour, with no advance. She was examined again and a puppy removed, with the assistance of fingers only. One hour later, a third puppy was born, with the same assistance, the time being 10.30 p.m.

At three o'clock the following morning, I was again called, and found the bitch had good strong pains, with no result. She was examined and a puppy removed with the assistance of forceps to breech. At 5.30 a.m. another puppy was removed, with the same help; at 7 a.m. a sixth puppy was assisted, without the help of forceps.

The bitch settled down, and had no further

pains until early afternoon. At 4 p.m. another puppy was born spontaneously; at 5 p.m. another, assisted without forceps. At 8 p.m. the bitch was restless and distressed, and at 9.30 p.m. another puppy was delivered, assisted with forceps to breech. Between 10 and 10.45 p.m. two more puppies were born, one assisted, the last spontaneously. In all, eleven puppies were born, ten of these being alive, and labour lasted 29 hours. The bitch had small doses of pituitrin between the births of the puppies, to a total amount of about 5 c.c.

Sequelae.—The first day after whelping the temperature was 105·4°. The bitch was given an intramuscular injection of prontosil soluble, 10 c.c. She did not appear unduly ill and took lactol several times, her evening temperature being 105°.

On the second day, the temperature was 105·2°; the bitch did not seem so well and refused all nourishment. At mid-day, prontosil, 10 c.c., given intramuscularly, was repeated, and there was a slight offensive discharge from the vulva. The evening temperature was 105°, and the bitch appeared much more prostrate.

The next day the condition appeared much the same and discharge was foetid and offensive. All the puppies were removed and divided between two foster-mothers. The bitch was even more prostrate and a further intramuscular injection of prontosil, 10 c.c., was made.

On the fourth day, there was a fall of temperature to 103·2°, and the patient was given prontosil album, two tablets, three times daily. The discharge was purulent and profuse. I instructed the owner to douche the bitch three times daily with eusol solution diluted. The evening temperature was 103°, although the bitch still remained prostrate.

The following day the general condition of the bitch was much the same, the discharge was less profuse, and the temperature 103°.

On the sixth and seventh days the bitch showed signs of gradual improvement, discharge became less profuse and less offensive, and she showed more signs of life and moved about.

The prontosil was discontinued on the tenth day, by which time the patient was nearly back to normal. A few days later, the bitch developed mastitis; incision was practised and rapid healing ensued.

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Tuberculosis in a Goat

P. T. BEGLEY, M.R.C.V.S.
Londonderry

On August 7th, 1937, I examined the carcase of a she-goat slaughtered at the city abattoir, Londonderry. The animal was in fair condition and was over three years of age, "broken mouthed."

On *post-mortem* examination the following lesions were found.

Lungs.—Extensive caseous, and caseo-purulent lesions were present throughout the substance of both lungs.

Mediastinal and Bronchial Lymphatic Glands.—These glands contained caseous lesions.

Pleura.—Tuberculous pleurisy present.

Suprasternal Lymphatic Glands.—These contained caseous tuberculous lesions.

Peritoneum.—Tuberculous peritonitis present.

Liver.—This organ was extensively affected on the surface with tuberculous lesions. There were also a few lesions present in the substance of the liver, and these were caseous.

Hepatic Lymphatic Gland.—This gland also contained tuberculous lesions.

Pharyngeal Glands.—These contained well-developed, characteristic tuberculous lesions of a caseous character. My examination finished here; afterwards the carcase was condemned. Specimens from the liver, lungs and lymphatic glands were submitted to the Veterinary College of Ireland for further examination, and Professor A. O'Dea confirmed the case as one of tuberculosis, as tubercle bacilli were demonstrated in smears from the lesions.

So far as I am aware, this is the only published record of the occurrence in Ireland of a case of tuberculosis in the goat.

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A Substitute for Suet

S. F. J. HODGMAN, M.R.C.V.S.
Shortlands, Kent

Subject.—A Dachshund dog, aged three years.

History and Examination.—This dog was brought in with the history that, half an hour previously, it had swallowed a needle and cotton. On examination nothing could be seen of these, although there was a great deal of blood in and around the mouth. A bronchoscope was passed, but no sign of a foreign body was observed.

Procedure and Course.—A meal of meat was then offered the animal which it ate at once, without any apparent sign of pain. As I was not at all sure that a needle had been swallowed I decided to chance an emetic. To my surprise half a needle and cotton was found in the vomited food.

The next day an X-ray was taken which showed the pointed end of the needle in the stomach. It was decided, as the dog was willing to eat, to feed four times daily, followed by medicinal paraffin. The food given was boiled rabbit, plus the skin, the bones being removed. On the second day a small amount of pain was observed and on the third day the second half of the needle entirely covered by rabbit's hair, was passed in the stools.

ANNOTATION

Sex Hormone Therapy*

In consequence, probably, of the relative ineffectiveness of most chemotherapeutic agents of the more usual type in the treatment of physiological irregularities and pathological conditions of the female reproductive tract, and partly because of the reasonably accurate results obtained in laboratory animals, clinicians are paying more and more attention to the employment of sex hormone therapy in reproductive disorders in both man and animals.

In the publications upon which this annotation is based (*q.v.*) there are recorded a further series of results obtained by the use of sex hormones in the treatment of human patients. It may be well to consider these in some detail, since although there are great differences between the human and the animal patient there may be some points of contact.

(1) Treatment of the Female Climacteric by Follicular Hormone—by H. R. Donald

Dr. Donald points out that although early experiences with oestrin (using the term in a generic sense) were disappointing, further experiences and a better knowledge of its underlying principles, have convinced him of its unique value.

During the climacteric there is a lessened secretory activity of the ovary with a rise in the gonadotropic output of the pituitary. The uterus loses its menstrual function and certain characteristic clinical secondary symptoms are evinced. These two phenomena need not, however, occur simultaneously. The symptoms have a somewhat complex origin. Donald suggests that endocrine substances have three distinct actions:—

(1) A direct specific visceral effect;

(2) Direct non-specific effect upon central autonomic centres. (Experimental and clinical observations suggest that anterior pituitary, thyroid, and suprarenal medulla stimulate the sympathetic system, while posterior pituitary, parathyroids, islets of Langerhans, and gonadic secretions stimulate the parasympathic;)

(3) The regulation of endocrine "balance."

Reference to these actions is useful in interpreting the secondary clinical symptoms which are associated with the climacteric—such as flushing, headaches, psychic unrest, sleeplessness, and a general disorder of organic function. These, Donald suggests, are to be principally regarded as evidence of an oestrin lack at this critical period of life.

He treated 94 cases with oestrin, and gives in considerable detail an analysis of the symptoms shown, and the effects of regular (or otherwise) administration of oestrone both by injection and orally. Case histories illustrate details where necessary.

In the great majority of cases very marked benefit resulted. Psychic, vascular, visceral, gastro-intestinal, cardiac and glandular irregularities, showed very definite improvement or disappeared. The wide range of conditions would naturally suggest that cases would not be expected to respond in equal degree. Conditions involving nervous symptoms improved most rapidly; while in others, where much tissue change had already occurred, a period of some three months might elapse before abatement. The details of administration need not concern us here, except to note that both oral and intramuscular injection methods were employed, and that relatively small doses were often effective. Regular administration throughout life is envisaged in some cases, while a three months' treatment was adequate in others.

The important point which, in the light of what follows, must here be stressed, is that by substituting an artificial supply of oestrone at a time when the system has ceased to produce its own natural supply, a complex series of disturbances involving dysfunction of organs can be prevented or corrected. Substitution therapy of this nature can have little or no application in normal veterinary treatment, for we have no evidence of a syndrome corresponding to the climacteric in females of the only species which are likely to live long enough to pass beyond the breeding age—mares and bitches. The results are nevertheless important since they strongly suggest that substitution oestrone therapy can be successfully carried out for long periods.

(2) Treatment of Menstrual Irregularities by a New Sex Hormone Preparation—by K. Bowes

This paper begins by quoting Novok as having written: "The results of gynaecological organotherapy have been disappointing while the accomplishments of gynaecological endocrinology have been numerous and brilliant." Achievements comparable with the above have hardly yet been reached in the application of hormone therapy to animal work, but considerable progress can be recorded. Mention has previously been made in these columns of the potent α-gonadotropic (follicle-stimulating) substance which appears in the blood serum of the mare at about the 42nd to 45th day of

*Annotation based on articles in the *Brit. Med. J.*, November 6th, 1937, as follows:—

(1) p. 899: "Treatment of the Female Climacteric by Follicular Hormone" (H. R. Donald).

(2) p. 904: "Treatment of Menstrual Irregularities by a New Sex Hormone" (K. Bowes).

(3) p. 896: "The Bisexual Properties and Co-operative Activity of Sexual Hormones and their Effects on Females" (V. Korenchevsky).

pregnancy and after reaching considerable levels gradually disappears from about the 90th to the 120th day. To date, pregnancy mares' blood serum is by far the richest source of supply of this substance which is known. It is probably destined in future to occupy an important place in counteracting certain forms of functional infertility in the larger domesticated animals, when used in conjunction with the β-fraction (now extracted principally from human pregnancy urine).

Dr. Bowes in the above preliminary note published in the *British Medical Journal*, records the results which have been obtained by its use (in the form of "Antostab") in correcting certain abnormalities of the human reproductive cycle. Only five cases are recorded, of which four were followed by alleviation or disappearance of the abnormality. The results obtained were verified not only by observation of clinical response, but by the method of uterine micro-currettage, which is useful as it gives a direct microscopic picture of the progress of cell change occurring in the uterine mucosa during the course of the treatment. As is pointed out, it is impossible to draw any valid conclusions from so short a series, but there can be no doubt that in this α-gonadotropic factor we possess a very powerful ovarian stimulating substance. Of recent years much accurate information has been collected with regard to its effects in the usual laboratory experimental animals, but its application to man and the larger animals has been limited mainly by the difficulty in securing adequate supplies of a potent preparation. There is now sufficient evidence that supplies will be available in fair quantities in future, but unfortunately the price will probably remain a limiting factor until such time as supplies are available from home sources. (The writer understands that at present supplies are mainly obtained from Continental countries by those firms stocking it in Britain.)

It would seem desirable to comment here upon the present method of standardisation and unit dosage. The standard unit which appears to be more or less generally accepted is the "mouse unit" (M.U.). This is defined as the minimal amount which, when injected into three- to four-week-old female mice will double the weight of the ovary in three to four days. While this may at first sight appear a reasonable unitage it must be pointed out that as a method of biological assay it is most unsatisfactory. The variation in size of the ovaries of three- to four-week-old mice is as much as ± 40 per cent. at least. Each ovary only weighs a few milligrams and even when a small tared weighing-flask is used and a very sensitive balanced employed, the rate of moisture loss is so rapid that a constant weight is by no means easy to achieve in practice. Further, samples of untreated mares' blood serum showing quite potent and rapid effects upon some test animals may fail to provoke a response in others. The question of the possibility of the existence of a refractory phase in the test mice is one that adds to the difficulty of this form of assay. The conclusion one reaches is that the mouse unit as at present adopted cannot be regarded as a reliable standard of activity when using this hormone for therapeutic or clinical purposes. It is to be hoped that ultimately a more reliable dose unitage will be adopted by the firms who manufacture or distribute the product.

In order to preserve a balanced opinion upon the usefulness of this or that hormone preparation, it should be clearly realised that these fall into two main categories: those which are substitution products and those which are primary stimulating products. The α-gonadotropic hormone, which is produced by the anterior pituitary in the living animal, belongs to the latter class. It is, therefore, capable of initiating reproductive processes. The substitution products (including the oestrin series of compounds) are mainly of use in reinforcing or exaggerating a functional process which is already in existance, or of bringing up to functional levels a process which is in abeyance.

(3) The Bisexual Properties and Co-operative Activity of Sexual Hormones and their Effects on Females—by V. Korenchevsky

It is now becoming recognised and accepted that there is no absolute sex-specificity of many of those hormones which were hitherto regarded as peculiar to the male or to the female organism. The terminology "male hormone" and "female hormone," though convenient for mentally envisaging certain physiological actions of these substances, is not scientifically accurate. Most hormones have actions in both sexes, and in fact the one may be converted into the other by a degradation or other process. In the above paper Korenchevsky surveys the bisexual properties and the co-operative activities of the sex hormones.

In order to illustrate the complexity of the subject and for reference, it may be desirable to include the list of the pure sex hormones and their derivatives which he investigated. These are:—

Male Series.—Androsterone, androstanediol and its water-soluble esters, testosterone, transdehydro-androsterone, Δ^4-androstenedione and Δ^5-androstenediol, and testosterone proprionate.

Female Series.—Progesterone, oestrone and oestradiol, alone or in various combinations.

Korenchevsky observes that of these only androsterone, transdehydro-androsterone, testosterone and oestrone have been found as such in the male, while dehydro-androsterone, progesterone (the corpus luteum hormone

or "pregnancy hormone") oestradiol and oestrone have been found in the female.

From the above list only those in which noteworthy results were obtained will be discussed here for the benefit of our readers. The first point to note is that nearly all the substances investigated were capable of restoring to a more or less normal degree those male or female organs which atrophy as the result of gonadectomy (castration)—the secondary sexual glands in the male and the uterus and vagina in females. Testosterone proprionate, which has a much greater activity than pure testosterone, is one of the most powerful of the male hormones. It restores to normal and then to super-normal the atrophied accessory glands of castrated males; while the atrophic uterus and vagina of the oöphorectomised female are restored practically to normal. Progesterone which, when injected alone into the gonadectomised female has only a weak action, shows a very powerful effect when oestrone or oestradiol is given simultaneously. Among those which are non-co-operative or to some extent even antagonistic are transdehydro-androsterone and Δ^5-androstenediol which have a mucification effect on the vaginal epithelium. If combined with oestrone this change is suppressed and only the oestrone effect is seen. One of the most interesting and important results is that obtained when oestrone and progesterone are combined. The co-operation of these two hormones in certain definite proportions (*e.g.*, 1γ of oestrone thrice weekly + daily injections of 1,500γ of progesterone) results in a change from an atrophic uterus to one which very nearly approximates to the picture seen in the uterus during normal pregnancy, while the vagina responded in exactly the same way as it does in pregnancy. An exact replica of the typical pregnant uterus has not, however, been produced in this series of experiments.

A discussion of the details of certain pathological changes in the uterus which were produced during the investigation is included, and it is pointed out that in some instances "masculinisation" of the castrated and normal female actually occurred. A word of warning is included regarding the potential danger of reproducing this condition in the female undergoing hormone treatment for sexual irregularity. The dangers would seem to be greatest when the hormones possessing male stimulating properties are employed.

A further point of possible significance should be noted. Treatment with oestrone or oestradiol to give best therapeutic results would seem to require the simultaneous or combined administration of progesterone. Although this hormone is normally produced in greatest amount only during pregnancy (from the corpus luteum of pregnancy), the fact that the corpus luteum of oestrus is formed and remains functional for a period before degenerating during dioestrus, suggests that its hormone (progesterone) has a definite function to fulfil in the oestrus cycle even in the non-pregnant animal. It would seem logical to speculate that in this may lie part of the explanation of oestrus or sub-oestrus manifestations occurring in cows and mares during the earlier stages of pregnancy.

Korenchevsky advances the following postulates which should be borne in mind by those who are responsible for treating sexual abnormalities by endocrine methods in the human female. He suggests that before treatment can be perfected it will be necessary:—

(1) To isolate and identify those male sex hormones present in the female system;
(2) To investigate the physiological and pathological properties of these, both alone and in combination with oestrogenic hormones and progesterone;
(3) To ascertain the normal ratio of oestrogenic hormones to progesterone and to male hormones in normal women; and
(4) To discover the pathological disturbances of this ratio in various disturbances.

Observations

The perusal of such accounts as those which are briefly reviewed above is bound to give rise to the hope that the day may soon come when the confusion and empiricism which still surrounds hormone therapy will be dispelled. At first, great hopes of success in the use of biologically assayed preparations of hormones were entertained, but, while in the hands of a few clinicians some success has been attained, the general concensus of opinion is that little more than the fringe of the subject has been touched. In veterinary practice, one of the greatest difficulties to be faced is the accurate diagnosis of that particular kind of abnormal function which is likely to respond to hormone therapy. The next difficulty is in ascertaining that when a successful result has been attained (especially in equine or bovine sterility) it was in fact due to the administration of the therapeutic agent. At the present time the application of some test to evaluate the magnitude of the response with some degree of accuracy is much needed. The usual objective signs in the breeding animal are not by themselves adequate. Practitioners of human gynaecology are able to employ four objective signs: these are (*i*) the transformation of a menopausal to an oestrous type of smear; (*ii*) increase in size of the hitherto hypoplastic uterus; (*iii*) the production of uterine epithelial proliferation, or of secretory epithelial activity in a small sample of endometrium obtained by means of a small tube strip-cutting curette and examined microscopically; (*iv*) the production of "oestrin-

withdrawal bleeding." Of these, the first and last will have no direct application in animal work, but it would seem to be not beyond the limits of routine veterinary technique to make frequent rectal examinations to determine the state of the uterus, and to devise a suitable instrument and method of removing tiny fragments of uterine mucosa at intervals, which can be examined microscopically and which might form a very useful indication of the state of the epithelium during the various stages of the reproductive cycle. The exact changes in the uterine epithelium which occur in the mare and cow during dioestrus and oestrus are not known in direct continuity: such accounts as have appeared have been based on examinations made after death. The peculiar anatomy of the cervix and the presence of cotyledons in the uterus might present some difficulties in the cow, but in the mare, at least, it seems that the method might readily be applied.

When the difficulties inherent in deciding, firstly, upon a diagnosis, and secondly, the question of dosage, have been overcome, there will then fall to be considered the implications adumbrated by Professor Korenchevsky. The reinforcing action of one hormonic preparation upon the activity of another, shown to have such profound effects in rats and in human females, can be expected to apply similarly to females of the larger domesticated species. The principle of co-operative activity is closely related to the vague but nevertheless well-recognised principle of "hormone balance" which is established in all normally functioning females. Korenchevsky's work, taken along with other publications, while throwing light upon points related to hormone activity which have hitherto remained somewhat obscure, has also served to illustrate the extreme complexity of the whole subject. The dangers of using hormones ill-advisedly is a very real one, and before these extremely potent and even dangerous substances can be used as routine agents in the armamentarium of the clinician, much more information will be required. The possibility of the presence in the female organism of cells (or organs) which produce male hormonic substances can never be entirely disregarded. It is interesting to note that a case was recorded recently (*Brit. Med. J.* 1937. **1.** 802) by Chapple, in which a perfectly formed and very beautiful woman possessed gonads which structurally and anatomically were proved to be testes. It is interesting to speculate upon the hormone system in such an individual by which the normal female characters were developed. An instance such as this serves the salutary purpose of reminding us that the whole hormone picture, in relation to sex determination, is by no means clear.

Wm. C. Miller.

ABSTRACTS

[Parasitic Gastro-Enteritis of Calves. Baker, D. W. (1937.) *Cornell Vet.* **27.** 4. 381-394.]

The author describes two outbreaks of parasitic gastro-enteritis in calves due to infestation with *Ostertagia* and *Cooperia*. The symptoms were diarrhoea, a rapidly progressive debility, emaciation, anaemia and sometimes oedema of the dependent parts of the body. There was no loss of appetite and the animals affected were all under two years of age. Symptoms were shown within a few weeks of the animals being put out to pasture, death occurring as early as eight weeks after their being first turned out.

At *post-mortem* examination *Ostertagia ostertagi* and *Cooperia oncophora* were present in large numbers in the abomasum and small intestine respectively. It is emphasised that in one case, visual examination, with the unaided eye, of the stomach contents did not disclose even one of the more than 6,000 worms present.

The pathogenicity of these parasites for well-nourished calves was demonstrated by placing a worm-free calf on a heavily infected pasture. In spite of being fed well the calf showed symptoms within 14 days and died exactly one month after being placed on the infected plot of ground. Ova first appeared in the faeces at 18 days after exposure to infection.

J. S. S.

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[Iso-Amyl-Ortho Cresol: A New Anthelmintic. Stewart, M. A. (1937.) *Cornell Vet.* **27.** 4. 338-348.]

Iso-amyl-ortho cresol was found to be very effective for the treatment of *Dipylidium caninum* infestations in dogs. The drug has no purgative action and needs to be followed by a purgative dose of magnesium sulphate. Castor oil is not a suitable purgative for use with this drug.

A single treatment is effective and the dose recommended is 0·1 c.c. (in a hard gelatine capsule) per pound of body weight. All dogs were fasted for twelve hours, and half an hour before the treatment 0·4 gm. of sodium bromide was given to prevent vomition. The drug appeared to be quite safe with the dose recommended.

It does not eliminate *Taenia multiceps* or *T. seriatus*.

J. S. S.

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[A Note on the Occurrence of Linguatula serrata (Frohlich, 1789) in Australia. Pullar, E. Murray. (1936.) *Austral. Vet. J.* April, 1937. Page 61.]

The author reviews the literature regarding the presence of *Linguatula serrata* in Australia.

It appears that while nymphs of this species are relatively common in Victoria, New South Wales and Queensland, and possibly in the other states. in the lymph nodes of cattle, adults are very rarely met with.

The author suggests that this may be because the nasal cavities of dogs are infrequently exposed during a routine autopsy. On the other hand, epistaxis and nasal catarrh (common but not constant signs of infection) are rare in Australian dogs. Other final hosts of this parasite are man, fox, horse, ass, sheep and goat, and the author considers that to this list the dingo should be added.

Of the intermediate hosts present in Australia, the authors consider that the rabbit should be regarded with suspicion and that *Linguatula serrata* may be maintained in Australia as a parasite of the fox and rabbit.

W. A. W.

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[Melophagus Ovinus (Linnaeus, 1758) Infesting a Calf. Pullar, E. Murray. (1937.) *Austral. Vet. J.* April, 1937. 77-79.]

The author records the presence of a number of mature *Melophagus ovinus* (the sheep ked) on a calf in poor condition that had been kept in a yard with some very heavily infected Merino ewes. The keds were mostly found on the under-side of the neck. As well as mature keds a number of apparently quite normal puparia were found. All adults and some of the puparia were removed and the calf put into another yard. The heavily infected ewes were removed and after a time the calf was replaced with other only slightly infested sheep. Thirty-three days afterwards the calf was examined and no adults or puparia were found on it. The authors conclude that with removal from gross contamination and under better conditions the few puparia left had failed to become established.

W. A. W.

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[Sulphur in the Control of External Parasites of Chickens. Emmel, M. W. (1937.) *J. Amer. Vet. Med. Ass.* **91.** 2. 201-204 (1 ref.).]

The experiments recorded show that when 5 per cent. commercial flowers of sulphur was added to the ration of hens heavily infested with lice the infestation was considerably relieved at the end of one week, while at the end of three weeks no living lice could be detected on the birds. The infestation of lice on control birds did not show visible reduction.

The experiments would indicate that at least a small portion of the sulphur fed was absorbed from the intestinal tract in some form, and eliminated by the skin. It was noticed that when the feathers of sulphur-fed birds were ruffled back an odour of sulphur dioxide could be detected, especially if the birds had access to sunshine, and since the treatment was more effective when the birds were exposed to sunlight it would appear that sulphur dioxide is the agent responsible for destruction of lice.

Heavy infestations with fleas were also completely controlled by feeding 5 per cent. sulphur to the infested birds. In this case treatment was augmented by scattering sulphur on the ground at the rate of 100 pounds of sulphur per 400 square feet, and by placing a light coating of sulphur on the floor of the houses and under the litter. The infestations were under control in three weeks, and although the feeding of sulphur was discontinued, reinfestation had not occurred after a period of four months.

Sulphur was also found effective in controlling the mite (*Dermanyssus gallinae*) and the tick (*Argus persicus*). Further experiments are in progress.

R. F. G.

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[A Note on a Variety of Salmonella Enteritidis Isolated from Pigeons. Shirlaw, J. F., and Iyer, S. G. (1937.) *Ind. J. Vet. Sci. and Anim. Indust.* **7.** 3. 231-242.]

Pigeons which had been inoculated experimentally with pigeon pox were shown to be infected naturally with a gram-negative motile bacillus belonging to the Salmonella group. The organism was isolated from the heart blood and was shown to be pathogenic by experiment for pigeons and details are given of the cultural, biochemical and serological work done on the organism. It is concluded that the organism is *Salmonella enteritidis*, but since no attention was paid to the different antigens possessed by members of the Salmonella group the conclusion reached as to the actual identity of the bacillus must be tentative only. [It is well known that pigeons may suffer from infection with *Salmonella typhi-murium* and both this organism and *Salmonella enteritidis* are pathogenic for man.]

R. L.

* * * * *

[Disease Aspect of the 1936 Report of the Department of Agriculture, New Zealand.*]

The subjects dealt with and conclusions reached may briefly be summarised as follows.

Ante-partum Paralysis in Sheep.—Feeding ewes on poor, as contrasted with rich pasture, showed that of those on the poor pasture several developed a ketosis which in some cases resulted

[*The administrative aspect was dealt with in the notice of this Report published in the Reports Section of our issue of February 12th (page 186). —*Editor.*]

in death whilst those on the rich pasture all remained healthy. The lambs from the former group were much weaker than those from the latter.

Pulpy-kidney in Sheep.—Good results were obtained by vaccination with a formalised culture of *Cl. ovitoxicus.*

Circling Disease.—A strain of the new genus *Listerella* isolated from the brains of cases of this disease was considered to be the cause of the condition.

Grass Staggers in Cattle.—Experiments carried out to ascertain if this disease was due to a magnesium deficiency revealed that :—

(*a*) The magnesium content of the pastures where the disease was prevalent was as high as that of pastures where it never occurred.

(*b*) The magnesium content of the bones of affected animals was as high as that of normal bones.

(*c*) Attempts to produce the disease artifically by feeding a very magnesium-deficient diet were always unsuccessful.

It was concluded that grass staggers is *not* due to dietary deficiency of magnesium.

Johne's Disease.—It was found that johnin was most efficient in detecting cases.

Mastitis.—Encouraging results were obtained by local treatment of the mammary glands with such drugs as azamine, entozon and chlorine.

Sterility in Cattle.—Sperm morphology of 94 bulls was examined and with those with a poor sperm morphology no diet deficiency could be correlated; it is suggested that the cause was an infection.

Work carried out on rats showed that two types of sterility could be produced, (*a*) due to excess dietary protein and (*b*) due to dietary protein of poor biological value.

Paspalum Staggers.—This form of staggers seen in New Zealand for the first time in April, 1935, has been traced to the ergotised seed head which is toxic. This was confirmed by feeding experiments carried out on two heifers.

Cobalt Metabolism.—Although it was confirmed in rats that a polycythaemia followed ingestion of large amounts of cobalt, in the case of hoggets receiving 5 mg. cobalt daily no blood changes were observed.

From soil, pasture, liver and blood analyses as well as field experiments, the chief chemist (Mr. Aston) is inclined to believe that the best course for farmers to follow in cases of bush sickness would be to use iron and not cobalt, which has not yet been shown to be an essential mineral in nutrition. J. S.

[Bovine Allergic Dermatitis (?). A Preliminary Report. Leasure, E. E., and Frick, E. J. (1937.) *Cornell Vet.* **27.** 4. 371-377.]

(Synonyms: Wheat poisoning, blistering disease, itching disease, weed poisoning, fagopyrism, light sensitisation, etc.)

Allergic dermatitis is an acute superficial necrosis of the epidermis affecting exposed and non-pigmented areas of the body, especially the udder, teats, muzzle, and dorsal surface of the ears. Its early symptoms are fever to 106·6° F., inappetence and dermatitis, evidenced by reddened, itching, slightly swollen areas on the body surface, and in some cases general distress. The temperature and itching usually subside, and the appetite returns to normal in 24 hours. The animal appears normal except for the thickened epidermis which soon wrinkles, cracks, separates from the underlying skin layers, and sloughs off in hard crusts. These denuded areas resemble to some extent smooth granulation surfaces. The disease is widespread in Kansas, occurring in cattle from mid-March to early June, usually from five days to one month after the animals have been placed on wheat or rye pasture. Later cases were met which had been on grass pasture alone. Up to 40 per cent. of animals in a herd may be affected but the death rate is very low (less than 1 per cent.). The economic loss from reduced milk yield and loss of flesh is, however, considerable.

The cause is unknown, but suspicion is attached to the yellow flowering tumbling mustard (*Sisymbrium altissimum*) because of its universal occurrence in the wheat, rye, native grass and wooded pastures throughout Kansas. Limited feeding experiments with this plant, however, failed to give any definite results.

The authors believe that the skin is sensitised to the sun's light rays by some substance eaten by the animals while on pasture and it was found that calcium gluconate and glucose solutions injected intravenously were useful in the early stages and that oily applications were beneficial in restoring the epidermis and hair to the affected areas.

J. S. S.

In Caithness a vicious bird known as the skua has been attacking and killing sheep. Mr. John Swanson, of Toftingall, Spittal, found that two of his sheep had been killed in mysterious circumstances. The animals' tongues had been torn out and the eyes were missing. The next day Mr. Donald Campbell, of Spittal, saw a large bird attacking a ewe, but when he approached the bird flew away, and the exhausted ewe died soon afterwards. Mr. Campbell placed a trap beside the dead ewe, and later the skua was caught by its feet in the trap. When Mr. Campbell approached the bird attacked him with its wings and beak, but after a struggle he got it to his home alive. Its wings measured five feet nine inches from tip to tip.

REPORTS

Development of the Cattle and Dairy Industries of India*

NORMAN C. WRIGHT

Dr. Wright, the Director of the Hannah Dairy Research Institute, Ayrshire, after a visit to India extending over five months, of which four were spent on tour, has published a very able and extremely valuable report on the milk industry in that country.

Although the technicalities of the report are peculiarly applicable to conditions in India and are of special value to authorities in that country the subject matter will repay the attention of everyone connected with animal husbandry and dairy economics in any part of the world.

In the short time at his disposal Dr. Wright has succeeded in writing a comprehensive survey of the existing problems and in making many valuable suggestions for their solution. It is perhaps unfortunate that he was unable to spend a whole year in India to obtain first-hand knowledge of the climatic conditions and to enable him to have produced a more complete historical survey of some of the problems. This, however, was not contemplated in the terms of reference and apparently he was only supplied with the more recent literature on the subject.

The report is divided into three parts and a useful summary of the principal conclusions and recommendations.

Part I deals with the production, collection, processing and distribution of liquid milk and the manufacture of milk products. It is pointed out that India, compared with other countries, stands second in volume of milk production, the total output being between 5,600 and 6,400 million gallons per year. This output is only exceeded by the United States of America and is four times that of Great Britain. In spite of this large production India falls to the lowest place in regard to the needs of the population and it is estimated that the average consumption per day does not exceed seven to eight ounces whereas 15 to 30 ounces per day is regarded as essential to growth and health. It is therefore not only necessary to increase the output but to effect all possible economies in its production and distribution to enable it and its products to become available within the purchasing power of the population.

Owing to the fundamental difficulties involved in handling milk under local conditions, only about one-third is consumed as liquid milk, the remainder being converted into indigenous products, of which butter and cheese are negligible. It is clear that what is needed in Indian dairying is a new outlook and a new technique. It is recommended that attention should be concentrated on the production of indigenous milk products and not on products of Western origin, that steps should be taken to ensure that an adequate supply of milk and milk products is available for consumption by the rural population, that attempts to introduce improved methods should be effected by evolutionary rather than revolutionary changes of technique, that the combination of producers on a village industry basis (as distinct from a factory basis) should prove the most effective form of dairy organisation in India and that improvements in production should be supplemented by the provision of improved marketing facilities. The peculiar difficulties connected with the distribution of milk in India and its adulteration can only be dealt with after prolonged and careful investigation. Dr. Wright has far-reaching recommendations to make in this connection.

Part II of the report deals with the production of milk in relation to the breeding and nutrition of milch cattle. It is pointed out that India possesses the largest number of cattle of any country in the world, but, owing to adverse climatic and economic conditions, the productive value of the cattle industry is not commensurate with its size. Nevertheless, the actual and potential value of cattle products is very great.

Milk and milk products may be valued at about 300 crores of rupees and is roughly equivalent to the value of the total output of rice and three or four times the value of the output of wheat.

India is also the largest exporter of hides and skins in the British Empire and cattle labour represents an important contribution to livestock in Indian agriculture, the monetary value calculated on the basis of cultivation costs being estimated at between 300 and 500 crores of rupees. It is obvious that the prosperity of the Indian farmer, who represents 90 per cent. of the population, depends largely on the cattle breeding problem. There is probably no single measure which would do more towards increasing and cheapening milk production in India than an improvement in the milk yields of Indian cattle.

All will agree with Dr. Wright when he states that in formulating breeding policies two essentials must be kept in mind: first, the

*Report on the Development of the Cattle and Dairy Industries of India (Wright, Norman C.). page 134, appendices 8, tables 46.
[Manager of Publications, Delhi. Price Rs. 1-8-0 or 2s. 6d.]

necessity for a policy which meets local requirements, and second, the need for continuity in the programme of breeding and the urgency of ensuring that the programme is not prematurely interrupted. He is very rightly opposed to cross breeding with sires of high yielding European breeds, for very good reasons, and he shows that experiments that have been carried out at various centres prove that by careful selection indigenous strains of Indian cattle can be built up which are capable of giving milk yields comparable with those found among average European stock. The point is made that she buffaloes must be regarded as the premier milk-producing stock in India and that their popularity is growing.

The question of cattle management is properly regarded by Dr. Wright as a very important matter, particularly under the exacting conditions of climate in India. The majority of Indian milch cattle are seriously underfed and, moreover, improperly fed. The young stock are almost invariably neglected, in the writer's experience. The fodder problem is a very serious one and requires to be dealt with in a comprehensive manner after careful investigation.

Part III of the report deals with research education and advisory services. As was to be expected, Dr. Wright has made certain recommendations to improve the existing conditions which, if adopted, would necessitate increased technical staff and expenditure. They do not appear to be unduly extravagant and are by no means visionary. It may be hoped that the responsible authorities will see their way to adopt some, if not all. It would be an error to infer that nothing had been done in the past but there is no doubt that owing to paucity of technical staff and financial considerations, operations have been unduly limited and hampered by a certain indifference to realities.

Dr. Wright recommends that the existing Dairy Institute at Bangalore should be transferred to a more suitable site and reconstituted as an Imperial Dairy Research Institute under a Director of outstanding ability, capable of initiating and directing research and of relating the Institute's work to the practical problems of the industry. The work of the Institute would be divided into four sections, namely, dairy bacteriology, dairy chemistry, dairy technology and dairy husbandry. Side by side with the development of the new Research Institute, efforts should be made to encourage the investigation of dairying problems at provincial agricultural colleges. Dr. Wright does not consider that the course of instruction for the Indian Dairy Diploma need be extended over two years, which is the present period, but certain alterations in the syllabus are desirable. Training for this diploma should be given at provincial colleges and not at the central Institute. With regard to post-graduate training, the course for the National Diploma in Dairying of Great Britain is considered to be entirely unsuitable. For graduates who require training in research methods facilities should be provided at the Imperial Dairy Research Institute and, in some cases, graduates should receive encouragement to gain further experience by studying at recognised research laboratories abroad. *It is considered desirable that dairying instruction at veterinary colleges should be extended to include a knowledge of elementary dairying and of the principles involved in the production and handling of milk, including the management of a dairy herd.* As a first step it is suggested that a Dairy Development Officer should be appointed in each province. The major duty of such an officer would be to initiate dairying developments and to take the lead in encouraging the adoption of improved methods.

Dr. Wright makes some important recommendations for the solution of problems connected with the breeding of cattle requiring the appointment of an animal geneticist. The work would include the investigation of problems of inheritance, of problems involving a study of the physiology of reproduction (including endocrinology) and of those connected with management and constitution. For this purpose greater use should be made of experimental and demonstration farms (of which there are some 200 in India) in studying problems of fodder production. In devising a rationing system suitable for Indian cattle full use should be made of existing provincial research centres as well as of the newly established Animal Nutrition Section of the Imperial Veterinary Research Institute at Izatnagar. As regards mineral and vitamin deficiency diseases the Disease Investigation Officers of the several veterinary departments should be responsible for field surveys while facilities should be provided at the Nutrition Section at Izatnagar for the mineral analyses of suspected pastures. *Dr. Wright remarks that facilities for instruction in breeding and livestock management should be provided at veterinary colleges, each college possessing a small herd of milking cows with accompanying bulls and young stock and sufficient land to demonstrate agricultural operations and to produce fodder for the herd.* In connection with the ultimate establishment of a Genetic Section at Izatnagar a small number of trained geneticists would be required.

It is strongly recommended that, in the interests of both efficiency and economy, livestock improvement and veterinary work should eventually be unified under a single department of animal husbandry. Dr. Wright thinks that it is probably inevitable that the Director of the department should be a qualified veterinary surgeon with a livestock expert with special knowledge and experience of cattle breeding on

his staff. This officer should not only be available to give expert advice on breeding matters but should be given full responsibility for the running of provincial cattle breeding farms and for selecting and purchasing pedigree and approved bulls. He should also be responsible for any work arising in connection with the institution of herd books and milk records. Although for such an officer a veterinary diploma should not be an essential qualification, every effort should be made to improve the training of veterinary graduates in all branches of animal husbandry. The unification of animal husbandry and veterinary work would not eliminate the need for close co-operation between the agricultural and veterinary departments and both departments should be under the same Minister.

The report makes it quite obvious that further cattle improvement cannot be effected without increased expenditure. The unification of animal husbandry and veterinary work must not be looked upon as a means of reducing expenditure on cattle improvement; rather is it a means of making the best use of any funds available for livestock improvement and of ensuring that such improvement is effected under the most favourable conditions. In this connection it may be remarked that in those provinces of India where the greatest development is shown livestock improvement has always been controlled by the veterinary departments.

The future development of the cattle and dairy industries in India must depend on increased financial assistance and Dr. Wright has undoubtedly made some very sound suggestions for a comprehensive scheme. It may be that India, for financial and other reasons, is not yet ready for a wholesale adoption of the recommendations, but no one can dispute the fact that there is a good case for immediate action on the part of those who are responsible for the administration of that vast country and its great population of needy people.

G. K. W.

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United Provinces, India*

The veterinary staff consisted of one Director, three Superintendents, one Veterinary Investigation Officer and 226 subordinates.

Disease.—There was an increase in the mortality from cattle disease, chiefly due to rinderpest and haemorrhagic septicaemia. Amongst equines 36 cases of glanders were detected and destroyed. Surra in equines and camels was reported from 22 districts, which points to widespread distribution. Treatment for this disease is becoming more popular, no less than 2,059 cases being treated at various centres. Inoculation against rinderpest and haemorrhagic septicaemia was carried out, the numbers respectively being 211,734 and 152,170. In the case of rinderpest, tissue virus inoculation was the chief method adopted. Serum alone was mainly used for haemorrhagic septicaemia but vaccine was also employed.

A particularly virulent form of goat pox was reported and confirmed.

An obscure disease of goats and another in sheep were the subject of investigation in collaboration with the Imperial Veterinary Research Institute.

An acute form of foot-and-mouth disease in pigs complicated with "pasteurella" infection was the cause of heavy mortality on one farm.

Several outbreaks of bovine trypanosomiasis were brought to notice owing to heavy mortality, and treatment was only moderately effective. Considerable diagnostic work was performed at the headquarters and circle laboratories and the number of cases treated at the Research Station Hospital, Lucknow, some of which were of special interest, was doubled in number over the previous year.

The number of veterinary hospitals and dispensaries at the close of the year was 182. There was a continued increase in the number of cases treated at the hospitals and a large number of animals were treated and castrated by the touring staff.

Breeding Operations.—The number of horse stallions at the close of the year was 52, with nine donkey stallions in addition. It is stated that the progeny of the Government stallions continue to show improvement and that some good stock were exhibited at the United Provinces Agricultural and Industrial Exhibition and other horse shows in the districts.

G. K. W.

*Report of the Civil Veterinary Department for the year 1936-37 (T. S. Davies).

[Superintendent, Printing and Stationery, Allahabad, United Provinces, India. Price 4 annas.]

MILK MARKETING SCHEME, 1933

The Milk Marketing Scheme, 1933, has been amended on three occasions by means of Orders made under the Agricultural Marketing Acts, 1931 to 1933. For convenience of reference, the Scheme has now been reprinted in its amended form. Copies may be obtained, price 1s. net, from His Majesty's Stationery Office in London (Kingsway), Edinburgh, Manchester, Cardiff and Belfast, or through any bookseller.

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"A Simple Instrument for Sawing in Embryotomy."—In the illustrated abstract of Heming's article relative to this instrument appearing in our issue of February 19th (page 221), the statement is made that "This instrument is manufactured by Hauptner's, of Berlin, and is priced at 12·25 RM (about 12s.). RM 12·25, however, approximates 20s., not 12s. The saws are 2s. each, and with postage and the 33⅓ per cent. import duty, an instrument costs about 32s. complete. It is obtainable from W. Bredt, 45, Hamilton Terrace, London, N.W.8.

REVIEW

[An Introduction to Bacteriological Chemistry. By C. G. Anderson. Published by E. and S. Livingstone, Edinburgh. (1938.) Price 10s. 6d.]

The number of books appearing upon bacteriological chemistry is steadily increasing but there is still room for a book, such as this little introduction, which treats the subject widely but yet with sufficient information to give the reader a distinct interest in his subject and cause him to enquire for more. The references to other books or reviews at the end of the chapters are perhaps sufficient for this purpose although a few selected original references might have been of value. It is difficult to appreciate what has decided the writer to refer by name in the text to some authors and to omit such references to equally important work also described. An elementary student can often be persuaded to take a great interest in his subject when it is given to him as something still living and in this connection reference to active research workers is useful.

The title of the book is somewhat of a misnomer for large sections are devoted to the biochemistry of the moulds and other micro-organisms and another section briefly reviews modern work on immunological chemistry. The actual text is satisfactory. It begins with chapters devoted to hydrogen ion concentration, colloids, enzymes and the general composition of micro-organisms. A section is then devoted to metabolism in which are described such subjects as the nutrition of autotrophic bacteria, the nutrition of heterotrophic bacteria, growth factors, bacterial respiration, nitrogen metabolism, carbohydrate metabolism, various fermentations, the proteins, the polysaccharides, the lipoids and the pigments of micro-organisms. A feature of the book is the plenitude of graphic formulae which are freely sprinkled through the text. Following the section on immunochemistry is an appendix on the isolation and identification of metabolic products, a chapter of use to those who wish to investigate such problems.

The book can be recommended to all who wish to take an interest in microbiological chemistry but especially to those who have not had the advantage of making an intimate acquaintance with the subject previously.

ERADICATION OF CONTAGIOUS ABORTION IN NORWAY

In the *British Medical Journal*, of October 30th, 1937, it was recalled that Norway was one of the first countries to undertake a serious campaign against tuberculosis in cattle. "As far back as 1895 the tuberculin test was introduced for the detection of infected animals. By a programme directed towards the eradication of the disease, which includes regulations forbidding the importation of reacting animals and the sale of reacting animals except for slaughter, it has proved possible to reduce the extent of tuberculous infection to the extremely low level of 0·18 per cent. Undoubtedly the anti-tuberculosis campaign has been helped by the small size of the average herd and the absence of overcrowding, but even so the achievement is one to be proud of. Attention is now being given to the control of contagious abortion. This disease, though less important than tuberculosis from the standpoint of human hygiene, is nevertheless of greater economic importance to the farmer by reason of the loss of calves, the frequent sterility of the infected animals, and the diminution in quantity of the milk supply that are so often associated with it. By a law dated June 29th, 1934, regulations were introduced with the twofold object of preventing the spread of infection from one herd to another and the elimination of infection from herds already infected. The State provides free blood testing and affords compensation for the slaughter of reacting animals. Special control is exercised over the movement of infected animals, over the sale of pregnant animals, and over common grazing grounds. The scheme is partly voluntary, but is apparently meeting with widespread acceptance. According to the Chief Veterinary Officer, Mr. N. Thorshaug,* 119,587 samples of blood were examined at the expense of the State in 1935, in addition to 14,000 special samples taken from animals destined for sale. Altogether 10,500 animals were found to react positively, of which 8,655 were slaughtered with indemnity from the State. Records were at hand, in 1935, of 2,278 infected herds. No fewer than 636 of these had been successfully freed from the disease by October, 1936, 787 no longer contained any reacting animals but were still waiting for their final agglutination test before being declared free, 647 had not more than two reactors, while only 208 had more than two reactors. There is reason to believe that in a short time contagious abortion will be practically eradicated from the majority of the herds in Norway. We in this country may well look with envy on this success. The difficulties with which we are faced are very considerable, but it is to be hoped that a serious attempt will now be made by the Government to deal with animal disease in a more radical fashion than has hitherto been attempted. So long as the importation of infected animals and the mixing of animals in open markets are permitted, and so long as financial assistance to encourage the farmer to rid his herd not only of diseased but also of infected animals is lacking, so long will any attempt to control tuberculosis in animals and contagious abortion be merely touching the fringe of the problem."

*Bull. Off. int. Hyg. publ. 1937, 29. 956.

The Veterinary Record

March 5th, 1938.

"National" and Divisional Membership: A Progressive Step

IT is with pleasure that, as noted on page 298, we are able to draw attention in this issue to a resolution passed recently at the Annual General Meeting of one of the Divisions of the "National," altering its rules of membership so that it will be incumbent on every candidate in the future to be a member of the parent body.

There are those who, although members themselves, do not hesitate to point out the financial burden which this would throw on the majority of recent graduates endeavouring to establish themselves in life and others who look upon the N.V.M.A. merely as the organisation responsible for issuing the *Veterinary Record*, and hence, where there has been free access to a copy of this each week, they have seen no reason to become members themselves. Both these contentions, and many others, are apposite to a full consideration of the problem, but it is pleasing to note that this consideration has not prevented an important Division of the "National" from taking a pioneer step which may prove to have far-reaching results.

Would the membership of the various Divisions suffer seriously if such a "restriction" became universal? Possibly it is upon this rock that the ships of many resolutions have foundered. In this connection it is interesting to note that, out of the 77 members of the Royal Counties Division, no less than 68 were members of the N.V.M.A. when the resolution was passed. Moreover, the most recent figures available relating to all the Divisions reveal the fact that, at that time, out of a membership of approximately 1,850 over 1,300 were subscribers to the N.V.M.A. In the light of this information the contention that Divisional membership would fall, loses some of its force. However, at least an experiment has been initiated, and many have little doubt that it will meet with success.

A further aspect is that relating to voting. Divisional members are automatically empowered to cast their vote on any problems which arise at their meetings and since it is not infrequently the case that such questions are of more than local import, and may even comprise a resolution upon which the "National" is empowered to act, is it not pertinent to enquire into the credentials of those who may influence our policy and derive benefit from our deliberations? It is contended that either voting power should be restricted or the present precedent should be followed.

It has never been the policy of the "National" to force upon its Divisions measures which have not received the whole-hearted approval of their supporters. There are many questions which take on a local colour and the application of which is necessarily different in different parts of the country. The "National" has endeavoured always to indicate, along general lines, what attitude it would be most desirable to adopt for the profession as a whole. But the parent body is always highly appreciative of the efforts of its Divisions to lend it strength.

We would tender our congratulations to the Royal Counties Division for their timely action and we trust that, in the not too distant future, their example will be followed.

In Parliament

The following questions and answers have been recorded in the House of Commons recently:—

Rabbits (Damage)

Mr. Hopkin asked the Minister of Agriculture whether he can publish the report of his Land Commissioner on the effect of the rabbit pest on grassland and on the Commissioner's recent visit to Castell Gorfod, St. Clears; and how many farms in that district have been abandoned owing to the rabbit pest?

Mr. W. S. Morrison: The report provides evidence of the well-known difficulty of improving or profitably cultivating grasslands, if rabbits, either on the land in question or on adjoining lands, are allowed to multiply unchecked. It does not appear that the report reveals any facts sufficiently new or outstanding to warrant publication, but I shall be pleased to send the hon. Member a copy if he so desires. The report mentions that damage by rabbits is alleged to be the cause of certain tenants in this district quitting their farms, but I am unable to say definitely how many farms, if any, may have been abandoned for that reason.

Mr. Hopkin: Would the right hon. Gentleman consider bringing in a Bill to deal with Wales and the West of England only in regard to this matter?

Mr. Morrison: The hon. Member will be aware of the position with regard to a Bill. A Select Committee of the House of Lords made certain proposals, and it is merely a question of Parliamentary time whether or not there can be any legislation along these lines during the present session.

N.V.M.A. DIVISIONAL REPORTS

Royal Counties V.M.A.

ANNUAL MEETING AND DINNER AT READING

Important Alteration of Rule Governing Membership

The outstanding feature of the Annual General Meeting of the Royal Counties Veterinary Medical Association (Division, N.V.M.A.) was arrival at a decision, of much significance to the parent body, so to amend one of the rules governing membership of the Association, that in future it will be required of every individual seeking to enter into membership that he or she shall be a member of the National Veterinary Medical Association. [This matter is the subject of editorial comment elsewhere in this issue.—*Editor.*] While the proposal itself is not a new matter for discussion by this and other Divisions—in times past, indeed, it has been discussed by Council, N.V.M.A.—the "Royal Counties" is the first to pass a rule carrying it into effect, thus illustrating once again in its long history that antiquity is no handicap to the pioneering spirit.

The meeting was followed by the annual dinner, both being held on Friday, January 28th, 1938, at the Caversham Bridge Hotel, Reading, and both were attended by marked success, although limitations of time necessitated the holding over to another occasion the address prepared by the President (Lieut.-Colonel H. Greenfield) after he had given the annual meeting his introductory paragraphs.

The following were present at the meeting: Lieut.-Colonel H. Greenfield (President), Mr. N. S. Barron, Mr. H. Bell (Hon. Secretary), Captain H. B. Collet, Major G. W. Dunkin, Mr. E. J. Gill, Captain W. L. Little, Mr. G. P. Male, Professor J. McCunn, Lieut.-Colonel P. J. Simpson, Mr. T. Whyte Stobo, Colonel G. K. Walker, Mr. F. W. Willett and Mr. R. A. Willett, together with the following visitors: Messrs. S. Guy Anderson, Hugh Curtis, W. F. Jarratt, Captain A. A. Kidd, and Major Williamson.

The minutes of the last annual general meeting, having been published in the *Veterinary Record*, were, on the recommendation of the Council of the Association, taken as read, confirmed and signed.

Correspondence.—(1) From the following members, apologising for their inability to attend: Mr. J. Bell, Professor J. B. Buxton, Mr. B. G. Catmur, Mr. T. A. R. Chipperfield, Mr. J. A. Craft, Mr. R. M. Davidson, Major R. C. G. Hancock, Dr. Tom Hare, Captain J. R. Hewer, Major Hamilton Kirk, Mr. T. W. Lepper, Mr. J. W. McIntosh, Mr. J. McKerlie, Major-General Sir John Moore, Mr. E. S. Paterson, Colonel P. W. Dayer-Smith, Major F. J. Taylor, Captain S. Villar and Mr. J. Willett.

(2) From Mr. T. A. R. Chipperfield, stating that, as he was retiring from practice in order to read for the Bar, he desired to resign, not from the Royal Counties V.M.A., but from the Council of the Association. Mr. Chipperfield added that he was a member of Council, N.V.M.A., representing the Society of Veterinary Practitioners and would do his utmost in that sphere of work to fight for the rights of general practitioners.

The President expressed the regret with which the Council had received Mr. Chipperfield's intimation of his desire to resign, but the Council felt that as he deemed it impossible for him to continue to perform his duties, there was no alternative but to accept his resignation with regret.

The meeting concurred, and the election of a member to Council to fill the vacancy thus created was deferred to the next meeting.

(3) From Dr. Fred Bullock, Secretary of the Victoria Veterinary Benevolent Fund, acknowledging with gratitude the sum of three guineas forwarded by the Association, being the amount secured through the "V.V.B.F. collecting box" during the past year.

Alteration of Rule

The President said that the next matter before the meeting was to consider, in accordance with the notice duly given on the agenda paper, the proposed alteration of rule 1, which now read: "Persons eligible to become members of the Association must be members of the Royal College of Veterinary Surgeons." It was proposed to add to this, that "Future membership of the Association should be confined to members of the National Veterinary Medical Association."

Proceeding, the President said that matter had, he believed, been discussed fully by the Royal Counties V.M.A. on two occasions previous to that meeting. Those discussion had not taken place during the past year, however, but in the year preceding, it having been "left on the table" at the last annual general meeting. An alteration of rule could only be effected, of course, at an annual general meeting.

Mr. G. P. Male proposed that the matter still be allowed to lie on the table. It was one of very great importance and required very full discussion—far more, in his opinion, than they could devote to it in the very limited time then at their disposal.

The President said that, in view of the fact that it had been on the table before, he did not think that the proposal should thus be summarily relegated to the table again. A letter bearing on the matter had been received from

Major Hamilton Kirk. Was it their wish that this be heard?

The meeting expressed assent, and Major Kirk's letter was read accordingly, the text being as follows:—

> "I much regret my inability to attend the meeting to-morrow but my good wishes will be with you just the same.
>
> "May I heartily support the item No. 4 on the agenda. I think it is high time that no member should belong to a Division without belonging to the parent body. It is wrong that men who are not members of the 'National' should be allowed to vote in Divisions for resolutions which are sent to the 'National' to be put into effect. The 'National,' to be truly representative of the profession, should have five-sixths of the members of the Royal College on its membership list, not *less than two-thirds* as at present.
>
> "Although you probably could not ask your old members to join the N.V.M.A. or resign, I do think your suggested new rule should apply to all who wish to join the Royal Counties in the future. I am not quite sure about it, but I believe it was I who proposed this new rule, at one of your previous meetings, therefore I am bound to support it. With every good wish."

The Hon. Secretary commented that he believed Major Kirk to be in error in stating that it was he who proposed the new rule.

Colonel G. K. Walker said that that was so, as he was the original proposer of that motion. In that capacity, he might remind the meeting that it was thoroughly discussed during his term of office and, he thought, approved for submission to annual general meeting. He was very keen to have the motion adopted by the Association, because he was convinced that it would ultimately be of great benefit to the parent Association. The "Royal Counties" had been in the forefront with such innovations before, and he was going to claim that in this instance, also, what the Royal Counties V.M.A. did to-day, the other Divisions would do to-morrow.

Mr. Male thought that there was no hurry about the matter, but if they were going to discuss it then and there, he would like to say that, in his view, it would be a great mistake if the Association passed the resolution. No one was more in sympathy with increasing the membership of the "National," but he did not think it should be by those means. An individual anxious to join that Association might not wish to pay two guineas to join the "National"; his partner might be a member of the latter body, and thus he could see the *Record* anyway; he might be a young assistant, and to force such members out of the Association was, he thought, absolutely wrong.

Lieut.-Colonel P. J. Simpson having pointed out that the proposal in no way affected existing members, Mr. Male added that, nevertheless, the Association wanted to secure all the new members possible.

Mr. N. S. Barron stressed the importance of recruitment for the N.V.M.A., particularly at the present juncture, when the "National" was doing more work for the profession than ever before, and that of a most important character. Every single member of the profession should not only be glad but anxious to support the parent body, and he was wholeheartedly of opinion that the proposed amendment of the rule should be passed.

Major G. W. Dunkin said that he was in complete agreement with the change of rule which had been suggested. Many years ago that subject was discussed, he believed, at a meeting of Council, N.V.M.A. It was then suggested by someone that it was improper that Divisions sending resolutions concerning policy should do so when a proportion of the members of the Division concerned voting in favour of such a resolution were not members of the parent body charged with the work of carrying out any particular job. He concurred completely with that point of view, for such a procedure was not only inconsistent but was grossly irregular. (Hear, hear.) He had, himself, seen men, not members of the "National," voting on questions of policy at meetings of the Divisions, and it seemed to him it was almost a question for the "National" to decide, whether they were empowered to accept such resolutions from bodies so constituted.

He had listened very intently in the past to arguments which had been put forward by men for whose opinions, in other matters, he had great respect, but he had never yet heard an argument which convinced him that such an amendment of the existing rule as was proposed that day should not be put into effect. One had heard arguments to the effect that an assistant need not join the "National" because he saw the *Veterinary Record*. He hoped no one in that room joined merely to get a copy of the *Veterinary Record*, because one could pay £2 12s. 6d. per annum and obtain it without joining. There were very many—abstract, if they liked—benefits to be derived from membership of the N.V.M.A. He could claim to have received no personal benefits since he had belonged to the "National," but he was a great admirer of its efforts to do the right thing, and however much they might on occasion disagree with its policy, that was not a reason for not joining the Association, though it might be a reason for changing those who carried out the policy.

It had also been said that in a practice where there were two or more partners it was almost an injustice to expect more than one of them

to belong to the "National." But such partnerships were sometimes broken and those who had drifted away had thought fit to join the N.V.M.A.

Major Kirk, in his letter, had insinuated, quite properly, that the more members of the R.C.V.S. were also members of the N.V.M.A. the stronger did that "National" body become. It was no use deputations from the "National" Council appearing before public bodies in support of what they supposed to be a "National" policy if they could not claim to represent a very large proportion of qualified veterinary surgeons. That fact alone was sufficient to warrant the Society's going on and supporting the proposed amendment of the rule, not only by a majority but, as he would like to see it, a unanimous expression of opinion in its favour that afternoon.

Colonel Walker said that as the Royal Counties V.M.A. was a Division of the "National," is certainly did seem inconsistent that that Division, or any other, should have in membership individuals who were not members of the N.V.M.A.

The President observed that they had had, in the limited time at their disposal, an admirable discussion, and the two sides of the case had been advanced with strength. He thought it would ill befit the office with which they had so courteously endowed him temporarily, to advance one side or the other, but he felt that it was incumbent upon him to try and sum up the situation. It appeared to him that both sides possessed two very definite ideals: on the one hand, there were those who, in support of the proposition, maintained that the Society should go the "whole hog" and insist that every veterinary surgeon, and certainly every member of a Division, should be also a member of the "National." He was convinced that all of those present subscribed to that high ideal, in principle. On the other side there were those who held the belief that entry into membership of the Division could rightly be regarded as the first step, and that the taking of the second step, joining the N.V.M.A., might confidently be expected to follow.

When he was at the offices of the N.V.M.A. a short time ago he was told that the membership of the Association now approximated 2,000. Towards that number the Division contributed approximately 70 members, and the question before them had to be considered not only in its relation to the desirability of increasing the membership of the N.V.M.A., but from the point of view of its possible effect upon recruitment for the Association, the present membership of which did not represent nearly as fully as they would like the veterinary strength of the area covered by the Division. Whether the alteration of rule now proposed would be a hindrance to recruiting for the Society he had neither the experience nor knowledge to say, and that, therefore, he left to them.

The motion standing on the agenda, having been proposed by Colonel Walker and being now seconded by Lieut.-Colonel Simpson, was put to the meeting and carried by a large majority.

The President informed the meeting that that decision would not affect anyone nominated for or elected into membership that day, under other conditions.

Nominations and Elections.—Mr. J. F. D. Tutt, of Winchester, was nominated by Major Taylor, seconded by Major Dunkin, and Mr. W. F. Jarratt, of Fleet, Hants, by the President, seconded by the Hon. Secretary.

Elections as members of the Association were unanimously made of Mr. L. G. Anderson, of Aylesbury, and Captain A. A. Kidd, of Thame.

Balance Sheet.—The next business before the meeting was to receive the balance sheet, which disclosed a satisfactory financial position. In introducing it, the President said that, as they all knew, Captain Bullen had been their Honorary Treasurer for some years and they were under a deep debt of gratitude to him for the work that he had done. Unfortunately, Captain Bullen had found it necessary to resign the post, as the nature of his work rendered it difficult for him to carry out the duties, and while they had found, in Major Hancock, a very good volunteer to take them over, a personal meeting between the two had not been possible. Nevertheless, Captain Bullen had submitted his figures to their Honorary Auditor, Mr. J. Willett, who had found them to be correct.

It was to be regretted that there was present no one who had any personal responsibility in respect of either the balance sheet or the accounts, for Major Hancock, they deeply regretted to learn, had had the misfortune to fracture a small bone in his foot.

On the proposition of Lieut.-Colonel Simpson, seconded by Colonel Walker, the balance sheet, as presented, was received and adopted.

Next Meeting.—On the proposal of Captain Collet, seconded by Captain Little, it was agreed that the next meeting of the Society be held at Oxford, the President outlining the programme, not yet complete, under consideration by the Council for that and other meetings for the year.

Dalrymple-Champneys Prize.—The President said that they would remember that consideration of this matter—that of making a nomination to Council, N.V.M.A., of a recipient for this year's award—was deferred from their last meeting at Camden Town. He had to report that the Council of the Society were strongly of the opinion that the Royal Counties V.M.A. should forward a recommendation, to do so being regarded as a duty both to the Society's own members and to the N.V.M.A.

It was agreed that a nomination be made, the choice of nominee being left with the Council of the Association.

Notice of Motion.—Lieut.-Colonel Simpson gave notice that at the next meeting he would move: "That the annual general meeting and the annual dinner of the Society be held on different dates." In brief reference to the matter, Colonel Simpson said that one important item of the proceedings at that meeting provided him with a perfect example of the necessity for the change he proposed. He knew that their President had prepared with great care an address of much interest and no little importance, and now they were left with but a few minutes before they were due to join the ladies at dinner. That was fair neither to the President nor to the Association, and he trusted that in due course the requisite separation of dates would be made. In the meantime, perhaps the President would give them the pith of his very interesting and, as he knew, rather long address, which could be given in full at a later date.

The President's Address.—The President, endorsing the views put forward by Colonel Simpson regarding the desirability of postponing the presentation in full, of his address from the Chair, said that that particular decision must, he presumed, inevitably rest with him. He was placed in rather an awkward position, as if he decided not to give his address in full, it might look as though he regarded it as so important that it should be held over and perhaps make difficulties at another meeting. He did not think, however, that in the circumstances in which they were placed that evening it would be for the general good were he to give the full address, and he was grateful to Colonel Simpson for his suggestion. He desired, therefore, to give them only the opening remarks, deferring the remainder to such a time as they might decide to hear them.

The opening remarks of the presidential address were as follows:—

"It is with deep gratitude, and pride, that I rise to thank you for your election of me to this Chair.

"While it may cross the minds of some, as I admit to it having crossed mine at presidential addresses, that most take office in turn and there may be no special selection or pre-eminence to dilate upon, I confess that the election to this office, by you, fellow workers in and for the profession I love—my peers, in that renowned English phrase—gives me a thrill, likely to be enduring.

"Some of my predecessors may have been rank and file practitioners like myself. Many of them attained eminence well known to you all. But what is more inspiring to me is that many of these great men are with us still.

"You may all be aware of my hatred of prominence and publicity, my lack of experience and volubility, and last but not least, my unconventionality. But none of you realise them more fully than I do.

"Indeed, the nomination to election, so graciously offered to me, was only accepted, when having quite other views myself, upon the advice of its being my duty tendered by one of our great men, who has held nearly every high office in the profession, and one perhaps as much respected as any.

"It is, therefore, with a high sense of duty and purpose, that I assume the office with which you honour me. I ask the forbearance of some, and the help of you all, as my adviser says that my views are very revolutionary; and then I hope to convince you that, whether the attainments of my predecessors were great or small, none have entered with a higher resolve of endeavour."

[The address will be delivered at a later meeting.]

The President was thanked for his contribution, and also for his conduct of the proceedings. Before the meeting dispersed, however, Major Dunkin, obtaining permission to make a brief reference to the decision to alter the rule governing entry into membership, said that it seemed to him that, in arriving at that decision, the Royal Counties V.M.A. had been once again a pioneer, and that he hoped it would be given due prominence by the official journal of the parent association.

. . . . .

The Annual Dinner

At the annual dinner, which followed immediately, the attendance was greatly augmented by the presence of many additional members of the Association, guests, visitors and ladies. Apologies for absence from the dinner were received from Sir John Kelland (Chief Veterinary Officer, Ministry of Agriculture), Mr. Donald Campbell (President, N.V.M.A.), Mr. J. F. D. Tutt (President Southern Counties Division, N.V.M.A.), and Mr. S. V. Golledge (President, Mid-West Division, N.V.M.A.).

"The Royal College of Veterinary Surgeons"

The toast of "The Royal College of Veterinary Surgeons" was submitted by Alderman Lucian Oldershaw, of Maidenhead, who, in the course of his remarks, said that he had devoted some time to researches into the subject of the toast which had been entrusted to him, but they all knew more than he did about its history; moreover, he was going to avoid using the word "veterinary," because it was one of the "grouses" he had against the profession that they had adopted that great mouthful. (Laughter.) He might, however, venture to

remind them that Vegetius, who wrote on military subjects in the fourth century, devoted a great deal of his first treatise to veterinary science, which showed how closely associated the science was, even at that time, with the art of warfare. He was just wondering if, in our mechanised Army, there would be so much cause for the noble corps now representing their science as there had been in the past. Let them hope so. (Applause.)

In pursuing his researches he had been presented with an interesting book on the subject, in which he first studied the profession's coat-of-arms, and he was gratified to find that in the first three quarters of that coat-of-arms everything represented was "proper"; then he was rather put out by finding that in the fourth quarter there was a bull, referred to as "erased sable": he did not know what that meant, but at any rate it was not "proper." (Laughter.) Was it there out of compliment to the allied College in Dublin, or was it that the coat-of-arms came into existence when that historic animal was referred to in the House of Commons? An Irish member had just spoken, and the member who followed addressed the House thus: "Mr. Speaker, Sir—After the pregnant bull, which my right honourable Friend the member for South Mayo . . . ." He got no further, and in *Punch*, next week, there was a portrait of him referring to him as the breeder of an historic animal. (Laughter.)

He had wondered a good deal why he had been asked to propose that toast, but he believed it was because he was an old friend of the President of the Royal College: he might almost say they were boys together. When he first went to Maidenhead, some 35 years ago, the name of Simpson was then, as it was now, a very revered one in the town, and it was a very great pleasure to him to be allowed to couple that toast with Colonel Simpson's name. On many occasions and in many directions he had met him doing good work, and he was perfectly sure that the work he was putting in on behalf of the noble profession they represented would be, like all the activities in which he had seen him engaged, thorough, sincere, able and wholehearted. (Applause.)

He (the speaker) had been facetious, to some extent, in what he had said that evening, but that was not for lack of admiration for the work veterinary surgeons performed or those who devoted themselves to it. In his experience, all those who had much to do with animals were kindly people: veterinary surgeons were a kindly race of men, and he would honour himself by giving the toast of that Royal College which guided their activities so successfully, and with it, the name of Colonel Simpson, the President of that College—particularly as he believed it was his birthday that day. (Applause.)

Lieut.-Colonel P. J. Simpson, D.S.O., T.D., J.P., F.R.C.V.S., President of the Royal College of Veterinary Surgeons, who was accorded an ovation on rising to respond to the enthusiastically-honoured toast, said that when he knew that Alderman Oldershaw was to be asked to propose that toast he was elated, because he knew him to be an orator, a gentleman who was supremely interested in education and, of course, in public affairs, or otherwise he would not have been an Alderman of Maidenhead. That elation was later tempered by the knowledge that, as Mayor of the Borough and a J.P., Alderman Oldershaw would have access to the criminal records of that period of joint youthful association to which he had referred—(laughter)—but the proposer of the toast had been kind enough to gloss over the faults and, instead, had painted all too flattering a picture of him.

He realised, of course, that he was speaking to a Division of the "National" which should have very accurate inside information of the duties of the Council of the Royal College of Veterinary Surgeons, because on looking at the membership roll of the "Royal Counties" he found that they had no less than 13 past or present members of Council, R.C.V.S., within their ranks, no fewer than four past or present Presidents, and two past or present Honorary Treasurers. He thought that constituted a record such as very few Divisions of the "National" could show. (Applause.) Those gentlemen who represented the Division on what might be called the parliament of the profession might not have been called on, however, to give an account of their stewardship and, therefore, those present might not be acquainted with all that went on at 10, Red Lion Square; he felt, accordingly, that it was his duty to give them as much information as he could in the short time at his disposal.

It was always a matter of surprise to him, going up and down the country, to come across, as he frequently did, veterinary surgeons who said, "Why don't the Royal College do this, that or the other?" Such men, through ignorance or for the want of using a little intelligence, did not know the limitations put upon the duties of the Royal College. The statutory ground was the power to supervise the education and examination of would-be graduates, to keep a register of graduates and subsequently to have certain disciplinary powers over them—so that they would see that really the ground covered by the powers of the Royal College of Veterinary Surgeons was comparatively small in extent.

It was perfectly true that in days gone by the Royal College had a great deal more ground to cover than it had to-day, and for this reason, that there had grown up that great body, the National Veterinary Medical Association, comparable to the British Medical Association—

and that was the body which should take up so many of the things affecting the profession in which the Royal College had no voice. The Royal College was only too pleased to work amicably and hand-in-hand with that powerful body, the "National," and only too pleased, also, to hand over to it many of the responsibilities that it had shouldered before.

On the educational side, one of the first and foremost things that was giving the Council cause for thought was the Loveday Committee—a committee appointed by Government, consisting of people of authority connected with the universities, agriculture and the veterinary profession. The Government, in fact, had suddenly taken a curious and remarkable interest in the education of the veterinary surgeon. It was very extraordinary: they never gave any encouragement, financial or otherwise, in the old days, but now that the profession, by its own efforts, was coming forward and taking its rightful place in public affairs, the Government, following upon applications for financial assistance from some of the affiliated Colleges, had decided to make enquiries into what was going on.

That committee had been going up and down the country seeking evidence from all sorts of public bodies and authorities, veterinary schools, private people and so on. The Royal College was asked to send a deputation and did so, this consisting of the Chairman of the Examination Committee (Mr. Livesey), the Registrar (Dr. Bullock), and himself, as the President. They had attended twice to give evidence on veterinary education before that committee and gave full information concerning the functions, powers and duties of the Royal College. They had to discuss the one portal system, and, of course, stressed the necessity for its retention by the veterinary profession. (Hear, hear.) In support of the system, they instanced the legal profession, which also enjoyed the advantages of a one portal system. The law might be "an ass," but the lawyers themselves were no fools, and they had seen fit to retain that system from time immemorial and were not going to give it up. It was the same with the dental profession. He was sorry to think that there should be any question at all of robbing the veterinary profession of that cherished right. The profession's representatives pointed out to the committee that the one portal system came into being, so far as the veterinary profession was concerned, to put an end to abuses arising from the fact that rival diplomas were being granted by the College in Camden Town and by the "Dick" College through the Highland Agricultural Society. In those days, the authorities recognised the danger of such lack of control and granted the Royal College the right to establish the one portal system. Then representatives before the committee stressed, also, that if the one portal system broke down it would be difficult to control the number of doors of entry into the profession that very soon would be opening.

However the Loveday Committee was due to report in a short time and they would then know what their findings were.

Another matter of interest was the five years' course of training. The first run of that course ended last July, and he had the great honour and pleasure on that occasion of welcoming and admitting the students at the London College who had gone through the course without a break. They were a fine body of men and women and their examiners said that the results showed that they were much better trained than under the old system. (Hear, hear.) It had been said previously that the institution of the five years' course would be the death knell of the profession, but they had never had such a large number of students. The main object of lengthening the course was to give increased facilities for the student to see more of what was termed "practical work" than he could under the four years' course. It was obligatory now upon the student that he should go to an extra-mural teacher and put in at least six months' work with him. To get out the syllabus during the change-over had been no mean undertaking; in the same way, it had been difficult to conduct examinations for four- and five-year course students at the same time, and he did think that great praise must be given to the Examination Committee, R.C.V.S., for the creditable way in which they had carried out the scheme so far as it had gone. (Hear, hear.) With the elimination of the four-year student they were now able to concentrate rather more on the five-year students, and in this connection some further adjustments would be necessary.

The President of the Royal College now proceeded to speak of the work of the Registration Committee. In the course of his observations under this head, Colonel Simpson commented that he was glad to say that the number of cases involving members of the Royal College was growing less and less. Cases had been brought before the Committee in regard to the issue of tuberculin test certificates, wherein it was a question of identifying an animal on a certificate in a right and proper way. Failure to do so could only bring the tuberculin test and, unfortunately, in some measure, the veterinary profession into disrepute. The R.C.V.S., in this connection, had set up a small committee, in the same way as was done a few years ago in relation to the proper identification of horses. This committee was to consider the matter with a view to devising a system for the proper identification of bovines.

In regard to cases in which a member of the

profession laid a complaint against the conduct of another member, he was rather inclined to the view that should such a case arise within the limits of the purview of the N.V.M.A., the evidence should be considered by the Division in which the complainant member resided. If the Division thought that the complaint had substance, it should forward the particulars to the "National," who should prepare the case and lay it before the Registration Committee of the Royal College.

Making brief reference to Part IV of the Agriculture Act, Colonel Simpson said that the Royal College had no wish to complicate matters by taking part in the discussions with the authorities which had been entered into by the N.V.M.A. The Royal College had, however, appointed a special committee to watch the scheme; to ascertain what effect, if any, the operation of the Act would have on the interests of practitioners. The College might conceivably have to modify the course of study and the examinations to meet the new position.

Concluding, Colonel Simpson said that he had endeavoured, in some measure, to give an account of his stewardship. It only remained for him to mention the acquisition by the Royal College of new, additional premises at No. 9, Red Lion Square, whereby they were now in possession of a very valuable block of property —and, more important still, of freehold land— in the heart of London. He thought they had acquired it at a reasonable cost and, what was more to the point, he hoped that within the next two years the whole would have been paid for and that without touching investments. If they examined the balance sheet of the Royal College next year, he thought they would find the finances of the College to be in a very flourishing condition. (Hear, hear.)

He desired to thank Alderman Oldershaw for his kindly remarks, the President and members of the Society for the great hospitality extended to him, and his audience for sitting so quietly while he had submitted them to such an "ordeal by detail" on the work of the Royal College. (Loud applause.)

"The Royal Counties V.M.A."

Brigadier A. C. Murray, Director-General, Army Veterinary Services, in giving the toast of "The Royal Counties Veterinary Medical Association," said that he was very proud of the honour which had been extended to him of proposing the toast of that very old Association. When he was asked to do so by their worthy Secretary, he exercised his mind as to what the Royal Counties actually were, and he found that none of his learned friends could enlighten him as to that, or how, indeed, the Association derived its name from the Royal Counties: even the Secretary did not know. (Laughter.)

The origin of the Association dated back to the year 1883; it was not, perhaps, the oldest of the County Associations, but it must rank high in order of seniority. The idea of forming the Association appeared to have originated with some prominent practitioners in the area now covered by the society. He thought that probably the particular gentlemen concerned were Mr. Lepper, of Aylesbury; Mr. Drewe, of Abingdon; Mr. Fraser, of Newbury; Mr. Irving, of Chipping Norton; Mr. Walker, of Oxford, and Mr. Kidd, of Hungerford.

The inaugural meeting was held at the Great Western Hotel, Reading, under the chairmanship of Mr. Lepper, who became the society's first President, at the following meeting in February, 1884, and he believed that Mr. James Simpson and Mr. Henry Simpson—father and uncle, respectively, of the present distinguished member and President of the Royal College—occupied the Presidency in due course. He believed, also, that Mr. Tom Lepper, son of the first President, was still a member of the Society. As far as he could see, the Simpson and Lepper families were the mainstay of the Association in its early days and had shown undiminished interest in its welfare ever since. (Applause.) In later years the names of Colonel Simpson and Mr. Male and members of the Willett family appeared to figure prominently. Colonel Simpson was for something like 25 years its Honorary Secretary, while Mr. Male acted as its Hon. Secretary and Treasurer for a very long period, too; indeed, it was largely due to the latter's grit that the society was kept alive during the war years. (Applause.)

He was afraid that the officers of his own particular Corps had not played any prominent part in the work of their Association; perhaps that could be explained by the fact that members of the Corps were very much "birds of passage"—they were "here to-day and gone to-morrow," and many of them had to spend most of their time abroad. For that reason they had not been able to come extensively into contact, as they would very much have liked to have done, with the Royal Counties V.M.A. and its members.

He had been told that the Association had been noted for the great harmony, dignity and decorum with which its proceedings had been carried out at all times. During its long years of activity there was only one occasion when there was anything like a rift in the lute; that was when a member tore up the minutes, threw them at the head of the President, shouted "Up the rebels!" and walked out. (Loud laughter.)

It seemed to him that an Association of that kind had two very distinct advantages. The first was that it enabled them, as professional

brethren, to meet and discuss professional subjects: they got to know the other man's point of view and his opinions, which was good for themselves and good for the profession. The second advantage—and one, he thought, of equal importance—was the social side of the Association's activities. Particularly at this time there were indications that members of the profession should be more together, and it seemed to him that by their meetings as an Association they could foster in the profession the spirit inherent in the motto of their Royal College, "*Vis Unita Fortior*."

He coupled with that toast the names of their distinguished President, Colonel Greenfield, and their worthy Honorary Secretary, Mr. Bell.

The PRESIDENT (Lt.-Colonel H. G. Greenfield, O.B.E., M.R.C.V.S.), in reply, said that he owed a debt to his old friend Brigadier Murray for his kindness in coming there to propose that toast, and to the company for the generous manner in which they had received it, and he had no intention of failing in the duty of acknowledgment. Nevertheless, he felt somewhat awed in his attempt, knowing that many of his colleagues, including some of his predecessors in that exalted office, were sitting there enjoying his predicament and wondering how he—a plain, village veterinary surgeon—would comport himself in those unusual circumstances. (Laughter.)

He had known Brigadier Murray for a great many years; in fact, he (the President) was instrumental in making life a little unpleasant for him when he first started his Army career. (Laughter.) He had seen him rise in that great Service until now it was their privilege to acclaim him as its Director: a great man, and one of whom they were all proud. (Hear, hear.) He was sure they would all be as delighted as he that Brigadier Murray should have come there that evening to their function. (Applause.)

While he did not wish to steal the thunder from the speaker who was to propose the succeeding toast, he did desire to take the liberty of specially welcoming amongst them several ladies who had done good work for the profession: not only good work in allowing their husbands the time and the liberty to do all that they had done for them, but good work at the profession's big functions, such as the Annual Congresses of the "National." In this connection he would like to refer, in particular, to Mrs. Simpson and to Mrs. Male. (Applause.) Unfortunately, other ladies to whom the charitable organisations of the profession also owed much—Mrs. Buxton, Mrs. Wooldridge and Mrs. Nickinson—were unable to be with them. He desired also to make special and honourable mention of the wife of their Honorary Secretary. (Applause.) Mrs. Bell, in her own way, had done a great deal for the society: she allowed their own "world's great worker"—(Laughter)—to do all those things that made the society what it was, that kept them together and preserved harmony.

Proceeding, the PRESIDENT said that he felt it his duty to make brief reference to some of the problems facing the profession to-day. As they knew, it was not his perquisite to have inside information, but these were times, it was clear to all, presenting opportunities they must take now, or soon, or not at all. As the President of the Royal College had said, the leaders of the "National" were to-day making a great fight for them, and he (the President) thought they should ask whether the societies were supporting adequately the efforts the parent body was making, and whether they, as individual members of those societies, were doing all they could. It seemed to him that the "National" should consider whether its organisation was so tuned to the times that it was able, at this vital stage in the affairs of the profession, to supply such information regarding its activities as would raise the spirits of members in the field and stimulate recruiting. In his view there was possibly some link missing. At such times as this, if they were to secure the support of public opinion, it was essential that veterinary surgeons in the country should know the facts of the situation and what their leaders required of them.

He did think it was vital that, in the Divisions of the "National," everything possible should be done to support the present body: their meetings should indicate by the size of the attendance that the societies had a spirit of determination to be behind the N.V.M.A. in its efforts to secure justice for the profession, but they must have full information as to the true position of affairs and what was being done.

One of the great leaders of British thought in our time was Joseph Chamberlain, who, long before his words reached fruition, said that the country must think in terms of Empire. If they had such a man in their profession he felt confident that he would say that, above all, they must have unity. Were that achieved, they would, by their various courses, come upon a common track leading them towards an ideal to which they could all look and for the achievement of which it was their duty to work. Only by so doing could they produce results for the children of to-day, and for which both these and their grandchildren would not cease to be grateful to them. (Loud applause.)

He thanked them most cordially for coming there that evening.

The toast of "Our Guests" was in the capable hands of Mr. G. P. MALE, Professor J. MCCUNN making a felicitous reply.

The enjoyment of the company was greatly

enhanced by the presence of Mr. Howard Spencer, who gave an extraordinarily clever entertainment, with cards as his principal means of amusement and bewilderment.

H. Bell, *Hon. Secretary.*

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North Midland V.M.A*

ANNUAL MEETING AT SHEFFIELD

The Annual General Meeting of the above Division was held at the Victoria Hall, Norfolk Street, Sheffield, at 3 p.m., on Tuesday, January 18th, 1938.

The President, Mr. D. D. Canning, occupied the Chair, and the following members attended the meeting: Messrs. T. Bowett, A. D. J. Brennan, W. Collinson, P. M. Evershed, T. C. Fletcher, G. Green, R. Hudson, E. Marrison, S. H. Nixon, F. C. Scott, H. Thompson, and the Hon. Secretary. The visitors present were Messrs. D. W. Caldwell, G. B. Edwards, V. G. Hinds and R. E. Hirtes.

The minutes of the last meeting, which had been published in the *Veterinary Record* on December 4th, 1937, were taken up as read.

Obituary.—Reference was made by the President to the great loss which the Society has sustained by the recent death of Mr. H. R. Laycock of Sheffield. The Secretary was instructed to write to Mrs. Laycock and convey to her the sympathy of the meeting with her in her bereavement.

Correspondence.—The Secretary read the correspondence. The letters were accepted by the meeting, none requiring particular comment.

Finance.—The Treasurer submitted his statement of income and expenditure for the year. This was found correct by the Auditors and was accepted.

Election of Officers

The election of Officers for the Session, 1938-9, now took place, as follows:—

President.—Mr. D. D. Canning.

Vice-Presidents.—Messrs. E. Marrison and A. D. J. Brennan.

Council.—Messrs. W. Collinson, T. C. Fletcher, G. Green, R. Hudson, S. H. Nixon and F. C. Scott.

Auditors.—Messrs. T. C. Fletcher and S. H. Nixon.

Hon. Treasurer.—Mr. H. Thompson.

Hon. Secretary.—Mr. H. M. Salusbury.

New Member.—Mr. R. E. Hirtes, Sheffield, who was nominated at the last meeting of the Division, was elected a member.

Veterinary Film.—By the courtesy of Messrs. T. J. Smith and Nephew, of Hull, a film, "The Treatment of Bone Fractures in the Dog and Cat," was shown. The opinion of the members was that the film was excellent and a good discussion followed on the points of interest brought out by the film.

Next Meeting.—It was decided to hold the next General Meeting of the Division on April 19th, 1938.

There being no other business, the meeting was concluded and a vote of thanks was accorded to the Chairman for his conduct of the proceedings.

H. M. Salusbury, *Hon. Secretary.*

*Received for publication January 21st, 1938.

Notes and News

The Editor will be glad to receive items of professional interest for inclusion in these columns.

Diary of Events

Mar. 12th.—Annual General Meeting of the North of England Division, N.V.M.A., at Newcastle-on-Tyne, 11 a.m.

Mar. 14th.—Meeting of the Editorial Committee, N.V.M.A., at 36, Gordon Square, W.C.1, 4 p.m.

Mar. 16th.—Meeting of the Lancashire Division, N.V.M.A., at Manchester, 2.30 p.m.

Mar. 18th.—Meeting of the Southern Counties Division, N.V.M.A., at Salisbury, 2.30 p.m.

April 1st.—Annual fees payable to R.C.V.S.

April 6th & 7th.—R.C.V.S. Committee Meetings.

April 8th.—R.C.V.S. Committee and **Council** Meetings.

May 5th.—Last day for nomination for election to R.C.V.S. Council.

May 16th.—R.C.V.S. Examination in Animal Management begins.

May 19th.—R.C.V.S. Annual Report and voting papers issued.

May 26th.—Last day for return of voting papers, R.C.V.S. Council election.

June 2nd.—R.C.V.S. Annual General Meeting. Election of Council.

June 9th & 10th.—D.V.S.M. written examination.

June 13th.—D.V.S.M. oral examinations begin.

June 22nd & 23rd.—R.C.V.S. Committee Meetings.

June 24th.—R.C.V.S. Committee and Council Meetings.

June 30th & July 1st.—R.C.V.S. written examinations.

Aug. 21st-25th.—Thirteenth International Veterinary Congress, Interlaken.

Sept. 5th-9th.—Annual Congress, N.V.M.A., at Glasgow.

Aug. 26th-27th.—Thirteenth International Veterinary Congress, Zürich.

R.C.V.S. COUNCIL ELECTION, 1938

A further nomination has been received, namely that of Dr. W. R. Wooldridge. The complete list of nominations is given below for the benefit of our overseas readers, who will already have received their voting papers.

Brittlebank, J. W. Sawbridgeworth.
Coleman, J. C., Swindon.
Dalling, T., Cambridge.
Dawes, H. W., West Bromwich.
Glover, R. E., London.
Hare, T., St. Albans.
Livesey, G. H., London.
MacKenzie, A., Market Drayton.
Mulvey, W. S., Chelmsford.
Procter, J. W., York.
Taylor, F. J., Oxford.
Walker, G. K., Abingdon.
Wilson, T., Nantwich.
Wooldridge, W. R., London.

In addition to the vacancies caused by the normal retirement of eight members, there are two others resulting from the death of Dr. O. Charnock Bradley, whose term of office would have expired in 1939, and the resignation of Mr. John Willett, whose term of office would have expired in 1940.

Not more than ten names must, therefore, be inserted on the voting paper.

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PERSONAL

A Veterinarian's Gallantry.—At Newquay Police Court recently, before the commencement of the ordinary business, the Chairman, Mr. S. H. Tamblyn, presented to Mr. Henry Geoffrey L. Harvey, veterinary surgeon, of St. Columb, the bronze medal and certificate of the Royal Humane Society for gallant conduct in attempting to rescue four persons in danger of drowning at Constantine Bay, on Sunday, September 5th, last.

Mr. Tamblyn said that at the request of Major Hare, Chief Constable of Cornwall, it was his privilege as Chairman of the Bench to make the presentation in recognition of Mr. Harvey's very brave attempt at rescue. Mr. Harvey was at Constantine Bay with his wife and heard cries for help and found that four people were in difficulties. He made very strenuous efforts at rescue, but eventually had himself to be assisted by Miss Iris May Rogers, of London. He, however, remained on the scene right through, and it was through his efforts that four people were saved.

Mr. H. G. L. Harvey, M.R.C.V.S., is the son of Mr. F. T. Harvey, F.R.C.V.S.

Presentation to Mr. T. D. Connochie.—At the annual dinner of the Galashiels and Selkirk Agricultural Society, on February 18th, Mr. T. D. Connochie, M.R.C.V.S., was honoured in recognition of the long period—over 55 years—during which he has practised as a veterinary surgeon in Selkirkshire. The presentation of a wallet of notes was made by Provost John Roberts, Selkirk, on behalf of members and friends of the Society.

Born in Selkirk in 1862, Mr. Connochie entered the New Veterinary College, Edinburgh, in 1878, passing out in 1882. He started a practice in Selkirk, and in 1886 went to Galashiels, where he is still carrying out his duties. No fewer than nine of his relatives have been, or are, members of the veterinary profession.

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R.C.V.S. OBITUARY

Dayer-Smith, Percy William, O.B.E., T.D., Brevet-Colonel R.A.V.C. (T.A.) (Retd.), 21, Cadogan Lane, Sloane Street, S.W.1. Graduated London, July 15th, 1898. Died February 23rd, 1938.

The Late Brevet-Colonel P. W. Dayer-Smith

Brevet-Colonel Percy W. Dayer-Smith, whose death we record with much regret, will be much missed in London veterinary circles, for although of an unobtrusive, retiring nature, he had many friends who respected him greatly and who will feel keenly the loss of his comradeship. He had enjoyed good health until a month ago, but was recently advised to undergo an internal operation. This was carried out at a London nursing home on February 17th, and he appeared to be making a good recovery, but pneumonia supervened.

Graduating in 1898, he followed private practice in the West End until about five years before the Great War. Relinquishing practice, he became a Director of a number of companies, including that of the renowned riding and posting business of W. J. Smith, Ltd., joining his father at Cadogan Lane, S.W.

Brevet-Colonel Dayer-Smith had a distinguished military career, joining the Third County of London (Territorial) Regiment—the Sharpshooters—as veterinary lieutenant. He was called to active service in 1917, serving in France and in the transport of horses to Gallipoli. He was mentioned in despatches and was also commended by the Head of the Veterinary Service for having the lowest mortality among horses in that section. After the War he was appointed D.A.D.V.S. of the Second London Division, and in this position he reorganised the veterinary services of the Division. At this time, it is interesting to note, he had as one of his junior officers, Major, now Sir, Frederick Hobday. He was promoted to Brevet-Colonel and other honours accorded him were the O.B.E. and the Territorial Decoration. He retired when mechanisation was adopted in the Territorial Force and the number of veterinary officers was cut down, in order to give place to younger men. He rendered service in many ways to the Territorial Force Association of the City of London, being a member of numerous committees and giving much valuable advice on the question of gas-raid precautions.

Although, as already stated, Brevet-Colonel Dayer-Smith practised his profession only in the earlier years of his life, he always maintained his interest in it and for many years he was a most regular attender at the meetings of the Central Veterinary Society. While he did not take any prominent part in its discussions, he was a tower of strength in committee and especially was his advice highly valued on questions of finance.

A Freeman of the City of London, and a member of the Worshipful Company of Farriers, one of his major interests in life was Freemasonry; as recently as February 9th last, he was invested with the honour of London Rank. He was Past Master of the St. Mary Abbott's Lodge the 1974, member of the West Middlesex

Chapter and Lodge No. 1612, and also of the Jubilee Masters Lodge No. 2712.

The last rites were performed at Golders Green Crematorium, on February 26th, the funeral being attended by a large assembly including representatives of the various companies and bodies with which he was associated. The Central Veterinary Society was represented by Professor J. McCunn (the President), and other members of the profession present were Major Sir Frederick Hobday, Mr. E. Lionel Stroud and Major Guy Sutton.

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GENERAL OBITUARY

Lingard.—On February 18th, 1938, at Menton, Colonel Alfred Lingard, beloved husband of Doreen Lingard, in his 87th year.

The Late Colonel Alfred Lingard

"Muktesar His Monument"

[Contributed.]

Better known to his contemporaries in the Indian Civil Veterinary Department and to the Indian services as Dr. Lingard, Imperial Bacteriologist to the Government of India, the announcement of Colonel Lingard's death will be received with regret by those who have outlived him.

Alfred Lingard, M.B., M.S., D.P.H., was a distinguished bacteriologist who, before taking up his appointment in India, was at the Brown Institute where he was a colleague of Horsley and Klein.

This was a new appointment and, at first, the facilities provided to enable him to undertake research work were somewhat primitive. His headquarters were at Poona, which he regarded as unsuitable. Whilst stationed there he devoted himself to a study of *surra* and published a comprehensive record of his research in the disease including his experiments in arsenical treatment.

Lingard was a man with ideals and an imposing manner and in due course he was successful in obtaining the sanction of the Government of India to provide himself with a well-equipped laboratory in a more temperate climate than Poona. Eventually Muktesar, in the Himalayas, was selected as a site and the Imperial Institute of Veterinary Research with its commodious accommodation and wonderful equipment has grown up there.

The building and equipping of the new laboratory in a rather inaccessible and remote place proved to be full of difficulties and was the cause of considerable worry to an eminent bacteriologist who found he had to deal with many administrative problems.

When the new laboratory was built it was decided to investigate the methods of preventive inoculation against rinderpest and in 1897, Professors Koch and Pfeifer arrived on a short visit to advise. It was found that increased accommodation and better arrangements for cattle were required and considerable extensions accordingly were made. In 1898, Lingard was compelled to proceed on sick leave. During his absence the laboratory was completely destroyed by fire and many records were destroyed. When he returned in 1900 building operations were renewed and further extensions made. Research was continued in rinderpest and other diseases of animals important to India. A large demand for antisera and other biological products arose and had to be dealt with.

It may be said that the great institute at Muktesar is largely a monument to Lingard and his part in its inception and progress should not be forgotten.

Dr. Lingard married in 1900 and retired in 1907, after 17 years' service.

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LEGAL NOTES

Death of Lambs: Action Against Veterinary Surgeon

In the King's Bench Division of the High Court on Monday last Mr. Justice Macnaghten found for the plaintiffs in an action, brought by Mr. Thomas William Walton, of Highlands Heath, Putney, S.W.; Mr. Harold Charles Purser, of Sidney Road, Staines, Middlesex; and Mr. George Corner, of High Road, East Finchley, N., claiming as executors of the late Mr. Thomas Walton, £141 19s. 0d. damages against Captain E. H. Wyly, veterinary surgeon, of Hacketts, Henfield, Sussex, for the loss by death of 68 lambs. The plaintiffs alleged that, in breach of contract, the defendant failed to exercise proper and reasonable skill, care and judgment, in his treatment of the lambs.

In July, 1937, at Dyke Farm, Poynings, Sussex, the plaintiffs, by their agent, Mr. Albert Edward Palmer, employed Captain Wyly to prescribe for and treat 102 lambs, the property of the plaintiffs, and which were affected with worms. The plaintiffs complained that the defendant negligently caused to be administered to the lambs a medicinal preparation, or "drench," containing arsenic and/or other poisonous substances in such proportions as to make it dangerous, and thereby caused the lambs to be poisoned.

The defendant denied the allegation. He said that the drench which he prescribed and supplied was the proper remedy for wire worms, and that his instructions that the drench should be administered twelve hours after feeding, and that the lambs should afterwards be kept in a yard for a day without food or water, were not carried out.

Mr. J. W. Morris, K.C., and Mr. John Davidson, appeared for the plaintiffs; Mr. Russell Vick, K.C., and Mr. C. J. T. Pensotti for the defendant.

At the conclusion of the evidence, Mr. Morris contended that the defendant was negligent in not instructing Mr. Palmer to keep the lambs from water after dosing them; that the drench was not correctly dispensed, there being too much arsenic in the bottle; that it was not an appropriate remedy for tape worms; that the defendant did not make a test to see what the trouble was and to see whether the lambs were susceptible to arsenic; also that some of the lambs were too young to be dosed and that for others the solution was too strong.

Mr. Vick, on behalf of Captain Wyly, contended that the drench was suitable for the lambs and that proper directions were given for its administration.

Judgment

His Lordship, in giving judgment for the plaintiffs, said that the claim was one for damages for the negligence of the defendant in the exercise of his profession as a veterinary surgeon. Besides the litigants the case was of importance to farmers and veterinary surgeons in general.

The plaintiffs had carried on the farm in question as executors since 1936, and they employed Mr. Palmer as bailiff. Captain Wyly had attended the stock on the farm since 1934.

In July, 1937, there was a flock of Southdown sheep, with 102 lambs, on the farm, and on July 14th, Mr. Palmer told the defendant that the lambs were infested with worms and he asked him for a remedy. Mr. Palmer's evidence was that he told the defendant that the lambs were suffering from tape worms, but the defendant said that he was told that they were suffering from wire worms and, presuming that that was the case, he prescribed a remedy. There was no evidence that the lambs were suffering from anything but tape worms.

The South African wire worm remedy was copper sulphate and sodium arsenite diluted in water and hydrochloric acid, and animals treated with that remedy had to be kept without water for some hours before and after they were dosed.

The wire worm made its home in the stomach of the infected animal, and the remedy was administered through the mouth, whence it passed into the stomach and killed the worms. If shortly before or after treatment the animal took water the remedy was washed out of the stomach and led to arsenical poisoning of the animal.

In South Africa the remedy was made up in the Government laboratory, whereas in this country the veterinary surgeon had to make it up himself.

The defendant made up enough for 100 lambs, and he brought the bottle to the farm on Saturday, July 17th. He told Mr. Palmer that it was very poisonous, that great care must be taken of the bottle, and he gave him plain instructions that the lambs were to be kept in for twelve hours and fasted before the remedy was administered. Those directions, which were given verbally, were also set out on the label of the bottle.

Accordingly, on the evening of Wednesday, July 21st, Mr. Palmer brought the 102 lambs into the yard of the farm, and they were fasted until the next morning, when Mr. Palmer, with the assistance of two men, administered the remedy. To each lamb he gave the prescribed dose, which was marked on a phial which Captain Wyly gave him. There was enough in the bottle for 100 lambs, and when the treatment had been concluded there was still some of the mixture left in the bottle.

The mixture in the bottle contained 90 grains of arsenic—less than one grain for each lamb—and that amount of arsenic was quite a safe dose provided access to water was not allowed within the prescribed time.

Unfortunately, after the administration the lambs were turned out into a field with a stream flowing at one side of it and a watering place. The lambs were turned out at 10 a.m., and within a few hours 68 were dead and the remaining 34 suffering, although by the evening a number of them showed no signs that they were ill.

The defendant arrived at about 2 o'clock, and, seeing the dead and dying lambs, was at a loss to know what had happened. He telephoned to the Veterinary College, London, and Professor Wright arrived at 6 o'clock. He was told of the remedy and administered an antidote for arsenical poisoning, and the 34 sheep survived. The professor was puzzled. If the prescription had been properly made up he was satisfied that the dose of one grain was quite insufficient to account for the death of the animals. The lambs were folded in a field of lucerne after the administration. It was not until shortly before the trial that the professor learned that the lambs, after being dosed, had had ready access to water. With that fact before him, the mystery of the death of the lambs was easily solved. In the professor's view there was no doubt that the 68 lambs had died from arsenical poisoning brought about by their being allowed to take water immediately after the administration of the remedy; and that the heat of the day and the access that the lambs had to the water caused the dose of arsenic to pass through the various organs of the animals' bodies and led directly to fatal results. Of that conclusion there could be no doubt.

The first defence was that Mr. Palmer was expressly told to keep the lambs without water for seven or eight hours after the administration, and that the loss was due to his failure to obey those instructions. According to Captain Wyly he not only told Mr. Palmer that the lambs were to be kept in but he also told Mr. Fowler, of the firm of agents for the farm.

Both Mr. Palmer and Mr. Fowler were quite clear that no such instructions were given. On the contrary, Mr. Palmer's recollection was that he was told by the defendant to turn the lambs out into the field after he had administered the dose.

He (his Lordship) accepted their evidence in preference to that of the defendant. Captain Wyly's evidence was not at all convincing, whereas that of Mr. Palmer and Mr. Fowler was clear and definite. He was satisfied the defendant not only failed to give any instructions that the lambs were not to have any water but also that he told Mr. Palmer to turn them out into the field, which the defendant knew had water in it.

The defence that the deaths were due to failure to carry out instructions which Mr. Palmer received was not the only one. There was an alternative and somewhat inconsistent defence—namely, that if the defendant did not give the instructions to keep the lambs from water, and if his testimony with regard to that was to be rejected, he was to be excused for failing to give such instructions, because the remedy was not very well known in England, and the fact that one must not let the animals have water—although the defendant knew that that advice was given and he asserted that he always gave it—was advice which was not always given by veterinary surgeons. It was said that if the defendant had known all that was possible to know he certainly would have given the advice, and it could not be regarded as negligence on his part to fail to give it. It was contended that what had happened was a misfortune, the consequence of which must fall on the owners of the lambs.

That defence could not be established. The law was simple enough. A man exercising a profession must use the care, knowledge and skill, which was reasonably to be expected from him, and that applied to veterinary surgeons.

The fact that the defendant did not realise the extent of the danger and, therefore, failed to give the warning, did not afford any excuse for that failure. He was a professed veterinary surgeon called in to deal with that flock of lambs suffering from worms and, either from carelessness or want of knowledge, he failed to give the instructions which a careful, competent

veterinary surgeon ought to have given, and in consequence the lambs died and he was liable to pay the owners of the lambs for the damage which resulted.

It was alleged that there was an excessive quantity of arsenic in the bottle, and this appeared to be shown by one of the dead lambs. Its intestines were analysed and found to contain 1·88 grains of arsenic.

Mr. Palmer was a very trustworthy witness and impressed him as being a witness of truth. He (his Lordship) rejected the idea that he gave more than one dose to each lamb. That seemed to lead to the conclusion that the plaintiffs were right, and that the defendant in making up the prescription did by mistake put in a double dose of sodium arsenite. But that conclusion did not necessarily follow, because in the prescription made up by the defendant from the ingredients which he had at hand in his surgery the arsenic was in solution in the bottle and liable to sink. For that reason the instructions were given to Mr. Palmer to shake the bottle well.

It was quite possible that in the administration of the remedy to 102 lambs the bottle was not sufficiently shaken the 102 times that it was taken up to pour out the dose for each lamb, with the result that the lambs to whom the administration came late would get a stiffer dose of arsenic than the earlier ones. He thought that the allegation that the defendant put too much arsenic in the bottle—more than the South African formula prescribed—was not made out.

The conclusion of the matter was that on the whole the plaintiffs were entitled to recover £2 1s. 9d. for the loss of each of the 68 lambs.

Judgment for the plaintiffs was accordingly entered for £141 19s. 0d., with costs.

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DANGEROUS DRUGS REGULATIONS

Withdrawal of Authorities

The Home Office has published a notice to the effect that the Home Secretary has withdrawn from Mr. John Lowndes, M.R.C.V.S., of Charnwood, High Road, Shenfield, Essex, the authorities to be in possession of and to supply the drugs or preparations to which the regulations apply.

Mr. Lowndes has also been prohibited from giving prescriptions for the purposes of the Dangerous Drugs Regulations.

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FOOT-AND-MOUTH DISEASE

The announcement, made in our columns and elsewhere last week, that the investigations into foot-and-mouth disease and particularly the search for an immunising agent are to be intensified by the Research Committee, has given widespread satisfaction. A programme of further research based on the findings already available is now being drawn up by the Ministry of Agriculture. In the meantime the slaughter policy will be enforced as in the past to stamp out infection whenever it appears. It is good news that the outbreaks which have been particularly serious in Wiltshire appear to be at an end. Movement restrictions are now being cancelled and in the course of the next few weeks, if there is no more trouble, those who have lost their stock will have permission to restock gradually and get their farms back into working order.

An outbreak of foot-and-mouth disease was confirmed on Saturday at Lenham, Kent. The usual restriction has been placed on the movements of cattle, sheep and pigs.

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THE HUNTERIAN ORATION

Importance of Veterinary Science

Giving the Hunterian Oration at the Mansion House on Monday night, Professor Sir Frederick Hobday, late Principal and Dean of the Royal Veterinary College, London, said that veterinary science had at last come into its own. Its importance for the welfare and prosperity of a country was as great as that of any other profession or industry. Agriculture was the backbone of a country, and the two chief vertebrae were its animals and its arable products. The wealth and well-being of the owner of the animals—whether breeder or seller—depended on the health of the animals, and the health of those animals must depend on the progress of veterinary science.

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A SIR ARNOLD THEILER MEMORIAL NUMBER

The Sir Arnold Theiler Memorial Number of the *Journal of the South African Veterinary Medical Association* [7. 4.] contains an extremely interesting survey of his life and work, written in an intimate style which will present to those who only knew him slightly, hitherto unsuspected aspects of his nature.

In a brief summary of his career mention is made of his early struggles in South Africa during the Kruger régime and the turning point when he was successful in organising a laboratory for the production of small-pox vaccine. Thereafter his prestige grew rapidly as the result of his efforts to control rinderpest during the great epidemic of '96, and his appointment as veterinary bacteriologist under Lord Milner's government at the close of the Boer War was the beginning of many years of uninterrupted service of the agricultural interests of South Africa.

Some of the more important veterinary problems with which he had to contend included various piroplasm and anaplasm infections, rinderpest, horsesickness, blue-tongue and heartwater, a variety of helminthological and toxicological problems, and perhaps the most important of all, the question of mineral deficiency, the study of which paved the way for his final interest in bone pathology.

The spread of the above-mentioned and other diseases was a vital factor in the process of rendering farming a hazardous and almost impossible undertaking and Theiler's success in completely or partially controlling many of these scourges is evidence both of his practical outlook and his genius as an investigator. It is, of course, realised that achievement has been due not to Theiler's efforts alone but also to those of his team of workers both in the laboratory and in the field, but to him must be given sole credit for the formation, training and direction of this team, and it was perhaps his greatest virtue that he could imbue others with his own insatiable enthusiasm and energy.

Sussesses under the Theiler régime included the development of methods of premunisation serving as practical palliatives against protozoal infections; rinderpest and lung sickness were controlled by policing measures; in the course of 20 odd years a reasonably satisfactory method of immunising against horsesickness was evolved

which has since been replaced by an extremely satisfactory method; blue-tongue was controlled by preventive inoculation; an efficient and practical method of vaccinating against anthrax was devised; many varieties of poisonous plant were identified and campaigns for their eradication commenced; losses due to internal and external parasites were lessened by the institution of therapeutic and hygienic measures; and with the solution of "lamsiekte" problem vast new areas of the country were automatically thrown open for cattle ranching on a profitable scale.

One of Theiler's activities which is perhaps less well-known was that of teacher and educationalist. Throughout his whole career he never ceased to teach himself; he was continually educating the farmers to trust him and his department and he was always training his subordinates as observers and investigators. Ultimately he turned his attention to the building up of a university faculty of veterinary science for the training of would-be veterinarians. In designing a five-year course of veterinary studies, he was completely free from all obsession of orthodoxy and the resulting curriculum which he evolved was designed with the main object of educating State veterinary officers. Every teacher was expected to be an acknowledged expert on his subject; subjects were not divided up arbitarily into years but were spread over periods ranging between six weeks and two years according to their relative importance. To ensure that a good foundation knowledge was obtained, all important subjects were divided into "general" and "special" sections and no student could pass onto the special course until he had satisfied his teachers and examiners that he was familiar with the general underlying principles. A special course was introduced to serve as a connecting link between veterinary physiology and anatomy on the one hand and clinical medicine and pathology on the other. To increase the efficiency of the veterinarian as an advisory officer, thorough practical courses in animal breeding and nutrition were organised whilst the field aspects of plant and mineral toxicology were stressed, time being made available by abbreviating to the barest minimum subjects such as "materia medica" which can always be looked up in a book. Most important of all, a very full two-year training in carrying out *post-mortem* examinations was given, culminating in a practical test held at the end of the final year.

The article concludes with a brief survey of Theiler's life after retiral from his official duties and includes several lengthy extracts from letters written by him and telling of his travels.

E. J. P.

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ANALYSIS OF PIG MORTALITY FROM BIRTH TO EIGHT WEEKS

The *Farmer and Stockbreeder* states that, at the request of a number of pig breeders in Berkshire, the County Milk Recording Society launched a pig recording scheme, a grant of £25 being made by the Agricultural Instruction Committee of the Berkshire County Council. "In the recording of litters the help of milk recorders was obtained, for they, located in various centres throughout the county, were well positioned for this work. The annual subscription is from 5s. to 10s., with a charge of 2s. 6d. per litter recorded.

"The first annual report (to September 30th, 1937) shows that 17 herds were registered and that there were 500 litters recorded. Of 5,167 pigs born alive, 3,775 reached recording age (eight weeks), a mortality of 27 per cent. The average number of pigs born per litter was 10·33, while the number of pigs recorded per litter at eight weeks old was 7·55.

"The figure of 7·55 pigs per litter reared to recording age is significant in view of a number of reports from individual sources that averages are much higher. Five breeds and their crosses were represented, although the majority were Large Whites. The following are the totals and averages:—

No. of litters recorded	500
No. of sows represented	341
No. of pigs born alive	5,167
No. of pigs reared to eight weeks (excludes 85 pigs sold with dams before reaching recording age).	3,775
Average number of pigs born per litter	10·33
Average number of pigs reared to eight weeks	7·55
Percentage reared to recording age	73·06
Average weight per pig at eight weeks old	29·53 lb.

"As one might expect, the greatest percentage mortality was in the large litters. The losses from birth to recording age (eight weeks) in percentages are attributed to the following main causes:—

Overlain by sows	61·0 per cent.
No clearly attributable reason	9·6 per cent.
Scour	7·7 per cent.
Malnutrition	7·4 per cent.
Chill	4·5 per cent.
Weaklings, died or slaughtered	4·4 per cent.
Various other causes ...	5·4 per cent."

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LIGHT HORSE BREEDING IN BRITAIN

Speaking at the luncheon held on Monday in connection with the fifty-fourth annual show of the Hunters' Improvement and National Light Horse Breeding Society, the President, Sir Robert Spencer-Nairn, said that in the past the Society had been very closely associated with the War Office. That association was quite natural, it being necessary that there should be available for Army purposes a large supply of light horses to replace normal wastage, and also a surplus that could be called upon in the event of mobilisation. The mechanisation of the Army had, of course, caused a change. Some years ago the War Office furnished the Society with a considerable grant, and more or less ran the premium stallion scheme; but gradually, as mechanisation increased, those grants were reduced and the Society was left in the position that either it must run the premium scheme itself or else see light horse breeding drop to a low ebb.

The development of such a situation could not be contemplated by those who were in any way interested in the horse. Although at present it might be considered that the horse would not be used in any future war, one never knew what developments might take place and what necessity there might again be for the supply of horses suitable for military purposes. Fortunately for the Society, the Race Course Betting Control Board came to its assistance, contributing a considerable sum towards premiums. Without that aid and the help in the past from the War Office, the grant of premiums would have been a difficult matter, if not an

impossibility; but with the reduction in the total amount of grants received it had been necessary during the past few years to reduce the value of the premiums.

That did not encourage stallion owners to bring forward the very best type of stallion, particularly as, to procure those stallions, they were in active competition with foreign Governments, who had been acquiring in increasingly large numbers the best thoroughbred horses for breeding purposes. In order to encourage owners to bring forward young stallions, the Society instituted a scheme of giving special premiums for younger horses, with the result that both this year and last year many new young stallions had been brought into the scheme. It was questionable whether the quality of all those young horses was as good as it was ten years ago, so many foreign buyers being in the market.

It would seem that if they were to prevent potential premium horses of really good quality from going abroad they must be in a position to increase the value of the premiums at least to the amount given before 1930, when the scheme was administered by the War Office.

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The National Veterinary Benevolent and Mutual Defence Society.—We are informed that, following upon the disbanding of the Society of Veterinary Officers, Sheffield, on February 19th, there has been forwarded to the Benevolent Fund of the National Veterinary Benevolent and Mutual Defence Society, out of the funds which the former Society had for disposal, a donation of 20 guineas.

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THE DISEASE OF SWINEHERDS

"From work recently reported by Dr. Paul Durand and his colleagues* it seems as if yet another addition will have to be made to the already lengthy list of diseases communicable from animals to man," states a recent issue of the *British Medical Journal*. "As long ago as 1914, Henri Bouchet, a country doctor in Haute-Savoie, observed a peculiar disease in swineherds, to which he gave the name 'pseudo-typhoid meningitis.' Other workers have encountered the same disease in Switzerland and Italy and have called it by a variety of names. The present authors give a careful clinical account of the disease, and describe its successful transmission under experimental conditions to human beings. After an incubation period of two to four weeks the natural disease commences with fever, headache, and severe muscular pains. Digestive troubles appear—foul breath, green vomit, abundant fetid diarrhoea, meteorism, and sometimes rectal haemorrhage. After about four days of this preliminary typhoid state the temperature falls nearly to normal, and the patient may attempt to resume work. In a couple of days, however, it rises again, and meningeal symptoms appear. The cerebrospinal fluid is under considerable pressure and the lymphocytes usually number several hundred per c.mm. Examination of the blood reveals a polymorphonuclear leucocytosis. After three or four days the meningeal phase comes to an end and the fever falls by crisis or lysis. In some cases a non-haemorrhagic macular or maculopapular rash appears on the abdomen and inner aspect of the thighs just before the remission. Conjunctivitis is not uncommon during the typhoid phase. The disease is practically never fatal, and leaves behind it a fairly solid immunity. Under the euphemistic guise of pyrotherapy experimental inoculations were made into mental patients. Blood from a case on the fourth day of the disease was injected intramuscularly into a patient with dementia praecox. This patient developed the disease and served as the starting-point for a series of 21 passages. Altogether 78 subjects were inoculated, some with blood, some with urine, and some with cerebrospinal fluid. The incubation period of the experimental disease was usually about twelve days and the duration about nine days. Clinically the fever and the typhoid-like symptoms were present, but the typical remission and the secondary meningeal phase were of less frequent occurrence. The rash and the conjunctivitis occurred in a proportion of the cases. Bacteriological and serological examinations were negative, and the fact that the blood plasma was still virulent after passage through an L_2 candle suggested that the causative agent was a filterable virus. The blood was uniformly infective during the first week of the disease; the urine became infective during the second week, and remained infective during the early stage of convalescence. The cerebrospinal fluid was sometimes infective. The virus was neutralised by serum from a patient who had recovered from the experimental disease, as well as by the serum of two patients who had suffered from the natural disease one or two years previously. The experimental evidence submitted leaves little doubt that the disease is due to a filterable virus. How the disease is transmitted from pigs to man is unknown, but it is suggested that the louse may be responsible. Case-to-case infection in man does not appear to occur, so that infection by the respiratory tract can probably be ruled out. Little seems to be known about the nature of the disease from which the pigs themselves suffer. It is said to affect young pigs of 1 to 2 months of age, to occur sometimes in epidemic form and to be characterized by convulsions and other nervous symptoms, to last about a fortnight, and to be accompanied by a very low mortality. There seems to be ample scope here for further research."

* P. Durand, P. Giroud, E. Larrivé, and A. Mestallet (1937). *Arch. Inst. Pasteur Tunis*, **26**, 213 and 228.

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THE NATURE OF VIRUSES

Commenting that there must still be many who are yet unaware that doubt is now being cast on the living nature of at least some of the filterable viruses, it is stated in a recent issue of the *British Medical Journal* that these numerous agents of disease differ from bacteria in many ways, but chiefly in their size, which in some cases is so small that it approaches that of some of the most complex single molecules, and in the fact that they are incapable of multiplication except in a living host. "Speculative doubt of their living nature has been expressed more than once before, and scraps of actual evidence connected with their properties have seemed to support it, but a more formidable campaign, aiming at proof that certain viruses at least are non-living, dates from Stanley's assertion of two years ago that the virus of tobacco mosaic disease can be crystallised. Subsequent investigation has made this observation appear in itself less dramatic and conclusive, but tends to confirm the conclusion based on it that the virus of this disease cannot be a living micro-organism.

The active agent appears to be a characteristic protein, found only in infected plants and produced in them in great abundance. At a meeting of the Section of Comparative Medicine of the Royal Society of Medicine, on November 24th, these discoveries were described by J. Henderson Smith and F. C. Bawden from the point of view of the plant microbiologist, and by J. D. Bernal from the point of view of the physicist, whose task it has been to study the structure of the particles in virus suspensions by methods such as that of X-ray spectrography. Almost all work on animal viruses proceeds on the assumption that they are living micro-organisms, a view which those responsible for this work are exceedingly reluctant to question, and the arguments in its favour were expressed at this meeting by C. H. Andrewes, who described the few attempts which have hitherto been made to identify the active agent in animal viruses with a protein, and submitted that they are of little significance. In his view the powers of adaptation exhibited by viruses, their capacity for multiplication in unaffected insect vectors as well as in the infected animal, and the resistance evoked by infection are facts consistent only with the belief that viruses are living things. It would be idle to speculate on the future course of this controversy, or to suggest that it may lead to the revelation of some hitherto unsuspected form of life, perhaps best to be described by the old term *contagium vivum fluidum*, but it may be pointed out that viruses vary considerably in particle size, and some of the larger ones can be photographed and have all the appearances of miniature bacteria. Short of assuming that viruses are of two different kinds, living and non-living—a proposition which their generally similar behaviour does not support—the two points of view here expressed are quite irreconcilable. The advent of the ultra-centrifuge, which will precipitate not only very small particles in the ordinary sense but even some of the larger molecules, and the impact of other physical and physicochemical methods on the biological sciences are likely to have further interesting and perhaps startling results."

Correspondence

Letters to the Editor should reach the Office not later than by the first post on Tuesday morning for insertion in following Saturday's issue.

All correspondence must bear the name and address of the contributor for publication.

The views expressed in letters addressed to the Editor represent the personal view of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

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COLONIAL VETERINARY ORGANISATION

To the Editor of the Veterinary Record

Sir,—I would refer to the letter from the Under Secretary of State for the Colonies, of June 30th, 1937, to the General Secretary of the N.V.M.A., on the subject of the appointment of an Adviser in Animal Health to the Colonial Office, published in your issue of February 5th, 1938.

No one will deny that crop husbandry and animal husbandry should be closely co-ordinated, but experience proves that the best co-operation between the two sciences is obtained by two independent services. To place one service of experts in an inferior position to the other leads to friction, discontent, lack of enthusiasm and inefficiency in the subordinated service. If crop husbandry needs an adviser at the Colonial Office then, in order to get co-operation, so does animal husbandry, and the two should carry equal weight on the Colonial Advisory Council of Agriculture. Anything less than that means discontent and inefficiency in the Colonial Veterinary Service.

The British Empire, with its variety of animal breeds, climatic conditions, insect and plant life, and soil composition, offers the finest field for research in veterinary science in existence, and also the greatest necessity, and yet there is a doubt if our work is not behind that of the French and Americans and possibly other peoples. The fault appears to be that there is no Empire organisation. Each administrative unit views a problem from its own parochial aspect and tackles it only in so far as its limited resources will allow. Such a system has the merit that the same problem is faced by a variety of workers viewing it from different aspects and under widely varying conditions, but the central authority which should put the jig-saw pieces into one picture does not exist.

What seems to be required is some form of Empire Veteriary Council with representatives of Britain, India, Canada, Australia, South Africa, New Zealand and the Crown Colonies, and other smaller dependencies. There would be great difficulty in arranging the meetings of such a council, but if only an officer were appointed to represent the Crown Colonies and smaller dependencies, the fact that he would be based on Britain with duties which would bring him into contact with most of the other units, would make him a valuable liaison officer.

The suggestion of a central research station in Kenya should be heartening to those working on tropical problems, but one fears that, unless it has the influence of a central authority to direct it, it would be bound to absorb too much of the political outlook of Kenya, and that its work might become distrusted and discredited by the other dependencies which it is intended to serve.

Yours faithfully,

U. F. Richardson.

Royal (Dick) Veterinary College,
Edinburgh, 9.
February 17th, 1938.

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SLOUGHING FOLLOWING INJECTION OF CALCIUM BOROGLUCONATE

To the Editor of the Veterinary Record

Sir,—Since the addition of boric acid to calcium gluconate, I have not been troubled with any cases of sloughing, as was commonly the case before; and, although I was severely criticised at the time, I have concluded from the correspondence that I had from other members (who unfortunately did not support me in your columns), and further, from the fact that it is now deemed essential to add boric acid to obviate this, that I was neither unique nor faulty in my technique.

For its administration, whether subcutaneously or intravenously I employ the Norden Gravity outfit (not the gravity and pressure), using a needle with a larger calibre when selecting the former. I consider that it is a mistake to inject where the skin is loose and prefer to do it over the ribs. The solution should always be used

fairly warm, and immediately afterwards the skin should be massaged and fomented.

Now and again when massage and fomentation has not been thorough, a persisting swelling has remained, but resolution has followed the application of a mild liniment such as lin. saponis meth.

The outfit referred to, consists of a rubber tube with a rubber cap attached, the cap having a flutter valve. The cap is slipped over the neck of the bottle containing the solution, which is then inverted, and the solution gravitates through a needle attached at the opposite end. This apparatus is also invaluable for the Entozon infusion treatment of mastitis, a teat syphon being substituted for the needle. It is made by the Norden Laboratories, Lincoln, Nebraska, and can be obtained through our usual druggists.

The various bellows injectors I have found very unreliable and on a par with that classically unreliable instrument—the ordinary enema syringe.

Yours faithfully,
J. F. D. Tutt, F.R.C.V.S.

Winchester.

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PROFESSIONAL PROSPECTS: THE MENACE OF UNQUALIFIED PRACTICE

To the Editor of the Veterinary Record

Sir,—I fail to see of what benefit it is to have so many students entering the veterinary profession when the R.C.V.S. appears to be unable to cope with the quacks whose numbers are not, as is commonly thought, decreasing, but are rapidly on the increase. Quite apart from the difficulty of dealing with institutional quackery, the Royal College can do nothing to combat the activities of unqualified horse and cattle "practitioners" who advertise and go about the country leaving their cards on people and in general behaving in a manner which would cause a qualified man immediately to be struck off the Register. Indeed, the position in regard to the future of practice is such that one is tempted to think, looking at the matter purely from the economic point of view, that it might pay to go through the College, secure the training and degree, and then resign and call oneself a horse and cattle practitioner!

If the R.C.V.S. is going to enrol so many students as members, surely legislation can be passed to make it an indictable offence for an unqualified man to attend a sick animal or to castrate any animal. Alternatively, cannot unqualified men be prohibited from obtaining drugs? Some of your own advertisers supply them—I know this to be a fact, and can prove it.

Yours faithfully,
A. M. McDonald.

Halesworth,
Suffolk.

February 17th, 1938.

Clinical Query

We have received from a member the following clinical question, to which the Editor will be pleased to publish informative replies:—

At what time do the testicles appear in the scrotum of (*a*) the cat; (*b*) the dog?

Calcium Borogluconate in Sterile Solution

The specific effect of calcium borogluconate in the treatment of milk fever and acute hypocalcæmia has resulted in a demand from veterinary surgeons for a sterile solution of the salt. 'Welcome' Brand Calcium Borogluconate solution, 20 per cent. is supplied, ready for injection, in rubber-capped containers of 400 c.c. Veterinary surgeons are invited to write to the manufacturers, Borroughs Wellcome & Co., Snow Hill, London, E.C.1., for descriptive literature.

Diseases of Animals Acts

SUMMARY OF RETURNS

Period.	Anthrax.		Foot-and-Mouth Disease.		Parasitic§ Mange.		Sheep Scab.	Swine Fever.	
	Outbreaks confirmed.	Animals attacked.	Outbreaks confirmed.	Animals slaughtered as diseased or exposed to infection.	Outbreaks reported by the Local Authorities.	Animals attacked.	Outbreaks confirmed.	Outbreaks confirmed.	Swine slaughtered.
	No.	No.	No.	No.	No.	No.	No.	No.	No.
Period 1st to 15th Feb., 1938	50	53	17	1,697	6	9	8	18	3
Corresponding period in									
1937	36	41	1	84	13	27	24	62	39
1936	25	26	—	—	9	49	25	88	72
1935	23	24	3	371	13	21	20	70	29
Total 1st January to 15th February, 1938	139	144	92	11,658	25	33	62	56	26
Corresponding period in									
1937	94	106	3	262	35	59	74	165	102
1936	71	93	4	379	26	77	87	303	180
1935	60	64	20	4,285	39	54	103	213	79

Note.—The figures for the current year are approximate only.

§ Excluding outbreaks in Army Horses.